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ARISTOTLE  
DE ANIMA

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# ARISTOTLE DE ANIMA

WITH TRANSLATION, INTRODUCTION AND NOTES

BY

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TO HENRY JACKSON  
WHO HAS INSPIRED MANY  
WITH HIS OWN LOVE OF  
GREEK PHILOSOPHY

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## ADDENDA ET CORRIGENDA.

- Page 15, critical notes, line 2, *after* reliqui codd. *add* Bek. Trend.
- „ 48, critical notes, line 4, *for* appendicem *read* Fragmenta I., ll. 1—3, p. 164 *infra*.
- „ 56, critical notes, line 12, *after* Bek. Trend. Torst. *add* Rodier.
- „ 56, critical notes, line 13, *after* Simpl. Soph. || *add* ζώντων P ||.
- „ 57, translation, line 7, *for* body *read* rest.
- „ 64, critical notes, line 9, *for* append. *read* Fragmenta II., l. 61, p. 166 *infra*.
- „ 114, critical notes, line 6, *for* τότε...31. γίνεται *read* τότε.. 31. καὶ ὁ.
- „ 116, critical notes, last line, *for* 162 *read* 160.
- „ 145, critical notes, line 12, *for* Hayduck *read* Heinze.
- „ 150, critical notes, line 7, *for* 540 *read* 140.
- „ 150, critical notes, line 13, *after* ap. crit. ad loc.) *add* Bek. Trend.
- „ 152, critical notes, last line, *after* Bek. Trend. *add* Biehl.
- „ 204, end of note on 403 b 8, *add* A similar confusion of οἱ λόγοι with οἱ λέγοντες τοὺς λόγους may be noticed 407 b 13—17.
- „ 251, end of first note on 406 b 13, *add* The meaning of ἐκστασις ἐκ τῆς οὐσίας, so far as ἀλλοίωσις is concerned, is given less bluntly and paradoxically 414 a 11 sq., 426 a 4 sq., where ἡ τοῦ ποιητικοῦ καὶ κινήτικοῦ ἐνέργεια is said to reside not ἐν τῷ ποιητικῷ, but ἐν τῷ πᾶσχευτι.
- „ 251, line 2 of note on b 17 *for* Koch *read* Kock.
- „ 356, end of note on 417 b 5, *add* Cf. 429 b 5 -9, 430 a 14 ὁ τῷ πάντα γινέσθαι. The limitation, temporal or modal, which I find in θεωρῶν, is often expressed by a dependent clause when the transition from ἔξω to ἐνέργεια is described, as here, in precise terms, e.g. ὅταν φρονῇ 417 b 8, ὅταν νοῇ 431 b 16, ὅταν θεωρῇ 432 a 8, b 29, and generally ὅταν ἐνέργῃ 425 b 29: cf. τὸ ἤδη ἐνέργου 417 a 12, ὁ ἤδη θεωρῶν 417 a 28.
- „ 377, line 11 of note on 419 b 24, *for* XIII. *read* No. XXX. (Vol. XIII.).
- „ 385, line 4 of first note on 420 a 31, *add* Cf. *Metaph.* 1052 b 25 31.
- „ 400, end of first note on 422 a 22 *add* Another Miltonic echo comes from *Il Penseroso* 13—16 “Whose saintly visage is too bright | To hit the sense of human sight, | And therefore to our weaker view | O’erlaid with black.”
- „ 449, end of note on 427 a 2 *add* Perhaps a 3 ἔστι δὲ...a 4 ἡ ἀδιαίρετον should rather be paraphrased thus: “There is, then, a sense in which the percipient of two distinct objects is divisible; there is another sense in which it perceives them as being itself indivisible.” If so, with ἡ ἀδιαίρετον we should supply τὸ αἰσθανόμενον or τὸ αἰσθητικόν, and not τὸ διαμετρών, as is done on p. 119.
- „ 524, end of note on 430 b 26, *add* In an instructive note Torstrik (pp. 196—198) calls attention to the distinction between ὥσπερ and ὅλον. The latter, he says, is used in citing examples or in passing from the genus to its subordinate species; the former extends a predicate from one subject to another in sentences like the following: “The Greeks are sharp-witted, as also (ὥσπερ καὶ) some of the barbarians.” If this be so, ὥσπερ is quite in place in comparing the meaning of two terms. The term φάσις denotes something predicated of something, as does the term κατάφασις. But the writer passes from the term φάσις to the thing denoted by the term when he adds in the next words that this predication is always true or false.
- „ 532, line 15, *after* better instance is *insert* ὁ δὲ νοῦς...οὐσία τις οὐσα 408 b 18 sq. Cf.

## PREFACE.

THE first English edition of this treatise appeared in 1882 under the title of "Aristotle's Psychology in Greek and English, with Introduction and Notes by Edwin Wallace." It has been for some time out of print and, if Mr Wallace had survived to see his work through a second edition, he would probably have made considerable alterations, owing to the researches of the last quarter of a century. Of these I resolved to make full use, when, with their accustomed liberality, the Syndics of the Cambridge University Press accepted my offer to prepare an independent edition. Among the fresh materials which have accumulated, two are of special importance: I mean, the critical edition of *De Anima* by the late Wilhelm Biehl and the series of Aristotelian commentaries re-edited under the auspices of the Berlin Academy. As regards the text, I have seldom had reason to deviate from Biehl's conclusions, but in my critical notes, which are based on his judicious selection, I have gone further than he did in referring to, or occasionally citing from, authorities. The interval of time has enabled me to cite with greater uniformity than Biehl could do from the Berlin editions of the Greek commentators. I have followed the example of Wallace in printing an English version opposite the Greek text. A century ago, perhaps, the Latin of Argyropylus with the necessary alterations would have served the same purpose by indicating the construction of the sentences and the minimum of supplement needed to make sense and grammar of Aristotle's shorthand style. But fashions have changed. The terse simplicity, not to say baldness, of literal Latin is now discarded for that rendering into a modern vernacular which, whatever its advantages, is always in danger of becoming, and too often is, a mere medley of specious paraphrase and allusive subterfuge. In compiling my notes I have drawn freely upon all my predecessors, not only on the Greeks themselves, who even in their decline were excellent paraphrasts, but also on modern editors and translators, from Pacius and Trendelenburg onward; while through Zabarella I have made some slight acquaintance with the views of the Latin

schoolmen. Among modern critics few have the great gifts of Torstrik, who by his insight, candour and logic contributed beyond all others to improve Bekker's text of the treatise. Of this distinction nothing can rob him: *haeret capiti cum multa laude corona*. In matters of punctuation and orthography I have taken my own line, but, lest I should be accused of inconsistency, I must add that when citing from other editions I have been scrupulous in preserving their peculiarities. Thus, while for my own part I admit indifferently *αἰεὶ* and *ἀεὶ*, *γίγνεσθαι* and *γίνεσθαι*, when I cite the *Metaphysics* from Christ, I follow him in always preferring *αἰεὶ* and *γίγνεσθαι*, to the exclusion of *ἀεὶ* and *γίνεσθαι*. Again, though I regard *ζῶον* and *μέμικται* as alone correct, in citing from other editions where *ζῶον* and *μέμικται* are printed I have been careful not to alter the spelling. In references to the *Metaphysics*, *Ethics* and *Politics* I have been content to give Bekker's page, column and line without the addition of book and chapter, thus avoiding the confusion which arises from the double numbering of certain books and chapters. I have tried as far as possible to give in the notes the reasons for my conclusions, so that where I have erred it will be more easy for my critics to refute me. My own claims to originality are modest enough. In fact, in a subject like this, absolute novelty of view is almost unattainable, perhaps undesirable.

I am indebted to Professor Henry Jackson, to whom the work is dedicated, for permission to publish sundry proposals, chiefly textual, taken from his public lectures delivered in the year 1903. Mr F. M. Cornford kindly placed at my disposal for this edition various notes on the third Book, which, after I had made use of them, were communicated to the Cambridge Philological Society. My book has profited by the vigilance and insight of several friends, to whom I desire to make fitting acknowledgment. In particular, Miss Margaret Alford, Lecturer of Bedford College, revised for me the first draft of the notes and added to them much of value. Nor must I pass over the good offices of Dr T. L. Heath, who assisted in correcting the proof-sheets, or those of the Rev. J. M. Schulhof, who aided me five years ago at the commencement of my task. Lastly, I must express very great obligations to the staff of the University Press, including their accomplished readers, for their able and zealous co-operation.

R. D. H.

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external soul, on which the life of the individual depends, plays the same part as in the folk-lore of savages to-day<sup>1</sup>. The opening lines of the *Iliad* draw a sharp distinction between the heroes themselves, left a prey for dogs and vultures, and their souls, sent down to Hades or the invisible world. The ghost of Patroclus, which appears to Achilles in a dream, is an emaciated, enfeebled shadow, deprived of all its strength by severance from the body, which was the real man. In the underworld these pale, ineffectual ghosts are much alike in general condition. Apart from a few notorious offenders punished for their misdeeds, they pursue the shadows of their former avocations. Whether in Greek language and thought two separate conceptions are blended, whether the sum of the intellectual and moral qualities was associated at one time with the blood and at another with the breath, whether the breath of life superseded an older smoke-soul, the exhalation arising from spilt blood, and whether these two conceptions were connected with the practices of inhumation and cremation respectively, are matters of speculation on which it is hardly possible to arrive at a definite conclusion<sup>2</sup>. When we pass from Homer to later poets we find the same primitive beliefs variously modified. In Hesiod the heroes go no longer to the underworld, but to the Isles of the Blest, and ancestral spirits have developed into "daemons" exerting a beneficent influence on their descendants<sup>3</sup>. From the dirges of Pindar we have two important fragments<sup>4</sup>. One is a glowing picture of the lot of the happy dead. In the other we are told that, "while the body of every man followeth after mighty death, there still liveth a likeness of his prime which alone is of divine origin, which slumbereth so long as the limbs are busy, but full oft in dreams showeth to sleepers the issue that draweth near of pleasant things and cruel."

In the Orphic and Pythagorean brotherhoods the primitive beliefs were moulded into a thoroughgoing doctrine of transmigration. Three main conceptions underlie Orphic asceticism. First, there is the opposition between body and soul. The soul is better than the body and is buried in the body for its sins, the body is its temporary prison. Next comes the necessity for a purification of the soul. All evil is followed by

<sup>1</sup> Frazer, *loc. cit.*, vol. II., c. iv.

<sup>2</sup> Etymologically *θυμὸς* is connected with *fumus*: cf. Gomperz, *Greek Thinkers*, I. pp. 249 sq.

<sup>3</sup> Hesiod, *Works and Days*, 121 sqq.

<sup>4</sup> Fragg. 95, 96.

retribution. Through abstinence and penance alone may the soul hope to regain its former blissful state. Thirdly, there is the long series of incarnations in which, according to their deeds during a former existence, souls take a higher or a lower place in human or animal bodies or even in plants<sup>1</sup>. Though these ideas occupy so small a place in literature, they are clearly very old, for the extant burlesque of Xenophanes<sup>2</sup> attests the acceptance of metempsychosis by Pythagoras, and all probability points to his having derived it from the still older Orphic sect. At Athens the Eleusinian mysteries, at which some such ideas were symbolically inculcated, were under the patronage of the state; but nevertheless the belief in an after life in the underworld, as set forth by Homer, for the most part maintained its hold upon the ordinary educated citizen.

Little is to be learned from the Ionian thinkers, whom Aristotle calls physicists or physiologists<sup>3</sup>. In the dawn of enquiries which, strictly speaking, were rather scientific than philosophical, men sought to explain to themselves of what things were constituted and how they had come into their present condition. Their problem, we should now say, was the constitution of matter and, if occasionally, when they found the primary element in air or fire or some other body, they also declared that this was the cause of vital functions, it was merely a corollary to their general doctrine and of no special importance. The subjects on which we find hints are the substance of the soul, the distinction between its various powers, and the nature of knowledge. So far as the substance of the individual soul was identical with, or a product of, the universal element, they all agreed in regarding it as not immaterial, but of an extremely refined and imobile materiality. The soul was credited with the power to know and perceive, as well as the power to move the body.

Heraclitus. Heraclitus, who had grasped the flux of matter in constant circulation, held it to be governed by an universal law. Knowledge to him consists in apprehending this law. In comparison with such knowledge he deprecated the evidence of sense: eyes and ears are better than the other senses, but are bad witnesses, if the soul does not understand. Meanwhile in the West other schools of philosophy had arisen, the Eleatic and

<sup>1</sup> Cf. Rohde, *Psyche*, II. pp. 103 sqq.

<sup>2</sup> Frag. 7 D.

<sup>3</sup> The philosophical speculations on the soul from Thales to Democritus and Anaxagoras are reviewed by Rohde, II. pp. 137—198. Cf. also Beare, *Greek Theories of Elementary Cognition*.

Pythagorean. Xenophanes distinguished between truth and opinion.

**Parmenides.** Parmenides derived the intelligence of man from the

composition and elementary mixture of his bodily parts, heat and cold being the elements of things<sup>1</sup>. The preponderant element characterises the thought of the individual man. But the chief legacy of Parmenides to his successors was his doctrine of the one immutable Being, which alone satisfies the requirements of an object of knowledge. The element of the Ionians did not satisfy these conditions, being endowed with the power to pass from one condition to another, whether intermittently or perpetually. Nothing, according to Parmenides, is ever generated or destroyed, however varied its manifestations and the changes it presents to the senses. On the foundation thus laid by Parmenides Empedocles, Anaxagoras and Leucippus constructed their systems, resolving apparent generation and destruction into combination and separation of primary elements or principles, themselves indestructible. They differed, Aristotle remarks, as to the number and nature of these indestructible elements<sup>2</sup>. Empedocles made a mistake in accepting a crude popular analysis into air, earth, fire and water, elements which do not so much as correspond to a rough division of matter into the solid, liquid and gaseous states. Anaxagoras, with his homoeomeries, was in our view still wider of the mark. Leucippus and Democritus at last found in the atoms a working hypothesis of the constitution of matter, which has lasted down to the present day. It is these three physical systems which most profoundly influenced Aristotle. He unfortunately accepted the first with modifications and opposed the last, by the merits of which he was nevertheless profoundly impressed. Each of these three systems took up the problem of the soul. But in the meantime medical enquiries had been actively prosecuted, and it is to a Pythagorean, Alcmaeon of Croton, that we owe the earliest

**Alcmaeon.**

advances towards the physiology of the senses. He was the first to recognise the brain as the central organ of intellectual activity. He dissected animals and by this means discovered the chief nerves of sense, which, like Aristotle, he called "conduits" or "channels," and he traced them to their termination in the brain. Deafness and blindness he held to be caused when by a concussion the brain was shifted out of its normal position and the channels of hearing and seeing respectively were thus blocked. He submitted the several senses to a searching examination, starting

<sup>1</sup> Frag. 16 D.

<sup>2</sup> *De Anima* 404 b 30 sqq.



with the anatomical construction of the sense-organ. The air in the ear he regarded as a sounding-board, and he attributed to the moisture, softness, flexibility and warmth of the tongue its capacity to reduce solid bodies to fluid as a necessary preliminary to tasting. He noticed the phenomenon which we call seeing sparks when the eye has received a heavy blow, and this suggested a crude theory of vision, postulating fire in the eye, a mistake repeated by Empedocles and by Plato. But it is with the glittering or transparent element of water in the eye that it sees, and it sees better according to the purity of the element. Vision is effected by the image of the thing seen and by the rays which issue from the eye within and pass outwards through the water. He derived memory from sense-perception and opinion from memory; from memory and opinion combined he derived reason, which distinguishes men from the lower animals<sup>1</sup>. What scanty information we have about him comes chiefly from Theophrastus<sup>2</sup>, but it would be a great mistake to acquiesce in Aristotle's neglect of him. He is only once mentioned in *De Anima*<sup>3</sup>, as having held that soul is immortal, on the singular ground that by its incessant motion it resembles the heavenly bodies, which he also held to be immortal.

In Empedocles we are dealing not with a sober physical enquirer, but with a religious enthusiast and poet-philosopher. He accepted the transmigration of souls in a slightly altered form; he introduced wicked as well as good "daemons," condemned for their sins to wander for 10,000 years and to become souls of plants, beasts and men. In the course of their purification they become prophets, poets, physicians, princes, and again return to the gods<sup>4</sup>. Sensation in general he explained by the action of like upon like. Particles emanate from external bodies and enter our bodies by channels or pores. They cannot enter unless there is a certain proportion<sup>5</sup> between the emanation and the size and shape of the channel which is to receive it. Thus a sense-organ is a particular part of the body which, possessing channels of a certain size and shape, is adapted to receive emanations of a certain kind, of flavour, odour or sound. But his theory of vision was more complicated. Not only are there

<sup>1</sup> Plato, *Phaedo* 96 B, where, however, the name of Alcmaeon is not mentioned.

<sup>2</sup> *De Sensibus*, §§ 25, 26 (*Doxogr. Gr.* 506, 25 sqq.): cf. Philippson *ὅλη ἀνθρωπίνη*, pp. 20 sq. and Julius Sander, *Alcmaeon von Kroton*.

<sup>3</sup> 405 a 29 sqq.

<sup>4</sup> Cf. Plato, *Phaedr.* 248 D, E.

<sup>5</sup> *συμμετρία*, *De Gen. et Corr.* I. 8, 324 b 25 sqq.; cf. Theophr. *De Sensibus* § 7. Perhaps Empedocles was seeking to express the same fact as was Aristotle when he afterwards applied the word *μεσότης* to sense.

emanations from visible objects, but there are also emanations from the eye. To this he was led by the analogy of the dark lantern, of which the camera obscura furnishes a modern illustration. The transparent plates of horn or linen in the lantern, made to protect the flame from the wind which might otherwise extinguish it, correspond to the thin coats or films in the eye covering the pupil, whose contents are partly of a fiery, partly of a watery, nature. From the pupil fiery and watery emanations leap forth through funnel-shaped channels to meet the fiery and watery emanations coming, the one from light, the other from dark, objects outside. The principle of "like by like" accounts for the mutual attraction of similar materials and their meeting, and, when the two sets of emanations meet, vision takes place. The preponderance of water or fire in the eye accounts for the fact that some animals see better in the dark, others in the daylight<sup>1</sup>. Thus, then, we perceive like by like, the four elements of all things, air, earth, fire and water, outside, because air, earth, fire and water are present in our bodies<sup>2</sup>. Blood is the most perfect mixture of these four elements and to this blood where it is purest, viz. about the heart, he attributed thought. As we see earth by earth which is in us, water by water, so we think by means of blood, the bodily tissue in which all four elements are most perfectly blended. Empedocles, then, consistently confined his attention to the bodily process. The mental or psychical state is either ignored in his explanation or reduced to its physical conditions. Yet on the problem of knowledge, aware of the imperfection of the senses, he counsels us to withdraw our trust from them and prefer the guidance of reason.

Anaxagoras distinguished sensation from intelligence and, whereas most of the Pre-Socratics agreed that we perceive things by having within us something like them, he held that we perceive in virtue of the presence within us of something opposite to the thing perceived<sup>3</sup>. Knowledge is not to be gained from the senses, because their powers cannot discriminate minute changes; while the reactionary physics which he propounded involved the presence in every sensible object of infinitesimal particles perceptible only in the aggregate and, blended with these, alien particles altogether imperceptible, because infinitesimal. Over against this infinity of homoeomerics he set

<sup>1</sup> Aristotle, *De Gen. et Corr.* 1. 8, 324 b 25 sqq., *De Sensu* 2, 437 b 23--438 a 5, Theophrastus, *De Sensibus*, §§ 7--24.

<sup>2</sup> *De A.* 404 b 11--15, 409 b 23 sqq., 427 a 21 sqq.

<sup>3</sup> 405 b 14--21, Theophrastus, *De Sensibus*, §§ 1, 2, 27--37.

the other constituent of the universe, which alone is pure and unmixed and has nothing in common with anything else. This is *Nous*<sup>1</sup>. The part it played was to communicate the first impulse to that rotatory motion which ultimately evolved from the chaos in which all things were mixed the present order and regularity of the universe. *Nous* is in all living beings, great and small, in varying degrees. It governs and orders and knows. We fortunately possess the account which Anaxagoras himself gave of *Nous*, and upon the evidence the reader must decide for himself what was its nature<sup>2</sup>. Plato and Aristotle construed it as immaterial reason and censured the philosopher for not making more thoroughgoing use of its mighty agency. Returning now to sense, the contrast necessary to perception Anaxagoras found most clearly in touch, for our perception of temperature depends upon contrast. We know the taste of sweet and bitter only by contrast. Seeing, again, takes place by the reflection of an image in the pupil, but in a part of it which is of a different colour from the object seen. Eyes that see in the daytime are, generally speaking, dark, while animals with gleaming eyes see better by night.

In the Atomists the tendencies of earlier Greek thinkers reach mature development. The problem hitherto had been to determine what matter is, and Leucippus propounded a working hypothesis which has ever since been sufficient for the purposes of science. Though this theory is derived from sense, it departs very widely from the evidence of the senses. Knowledge, said Democritus, is of two kinds, genuine knowledge that there are atoms and void and nothing else, and knowledge which is dark or obscure, by which he meant the information given by the senses<sup>3</sup>. The existence of void apparently contradicts observation, experiment fails even now to obtain an absolute void. The properties of body are all given by sense. The Atomists accepted the evidence of sense for resistance, extension and weight (perhaps Democritus was unaware of this last quality), but rejected it for colours, sounds, odours and flavours. Out of impenetrable atoms of different shapes and sizes the whole universe is built up, and the different qualities in things are due either to difference of shape or size, or to different arrangements, of the atoms composing them<sup>4</sup>. The soul is no exception. It is a complex of atoms within the

<sup>1</sup> 404 a 25 sqq., 404 b 1—6, 405 a 13—21, 405 b 19—21, 429 a 18—20, b 23 sq.

<sup>2</sup> Frag. 12 D, quoted entire on p. 229 *infra*.

<sup>3</sup> Frag. 11 D apud Sext. Emp. *Adv. Mathematicos*, VII. 138 sq.

<sup>4</sup> *De A.* 404 a 1—4, *De Gen. et Corr.* I. 2, 315 b 6 sqq.

body. Soul-atoms are spherical in shape, extremely minute and mobile. They resemble the atoms of fire<sup>1</sup>. In thus postulating a body within the body to account for vital and intellectual functions, Democritus reverts more consistently and systematically than any previous philosopher to the standpoint of the savage who, when he sees an animal move, is unable to explain the fact except by supposing that there is a little animal inside to move him. But there is this difference, that the little animal is imagined to be alive, the soul-atoms of Democritus are mere matter<sup>2</sup>. Thus to push the implicit assumptions of their predecessors to their logical consequences and make the half-conscious hylozoism of the early Ionians blossom forth in materialism is the great merit of Leucippus and Democritus. All processes of sensation, then, are instances of the contact<sup>3</sup> between bodies. They are caused by "idols" or films which are constantly streaming off from the surface of bodies, of inconceivable thinness, yet preserving the relative shape of the parts. So far this agrees with Empedocles; but the latter made his emanations enter the body through channels, while the Atomists conceived them as entering by the void between the atoms. The same explanation would apply to thought, which is excited when the material image of an object enters the equally material mind. All the senses are thus but modifications of touch. This was made out satisfactorily for taste, and Democritus attempted to determine the shapes of the atoms which produce the different varieties of taste<sup>4</sup>. Things made of atoms angular, winding, small and thin, have an acid taste, those whose atoms are spherical and not too small taste sweet, and so on. His four simple colours, white, black, red and green, are accounted for by the shape and disposition of atoms, but a similar analysis was not attempted for the objects of sound and smell.

In marked contrast with the attempts which the Atomists and even Empedocles made to bring physics and physiology into shape is the retrograde system of Diogenes of Apollonia, whose fantastic absurdities have been immortalised for us by Aristophanes. He was not satisfied with the resolution by Anaxagoras, himself a reactionary in physics, of bodies into infinitesimal particles possessing definite qualities, though he was

<sup>1</sup> 403 b 31—404 a 16, 405 a 5—13.

<sup>2</sup> Cf. *De A.* 406 b 15—22, 409 b 7—11.

<sup>3</sup> *De Sensu* 4, 442 a 29 sqq. For what follows see Theophrastus, *De Sensibus*, §§ 49—83, who treats of Democritus very fully.

<sup>4</sup> Theophrastus, *De Sensibus*, § 64 sqq.

more attracted by the supposition of unmixed *Nous*, which is the seat of intelligence. But he supplemented this theory by reverting to the position of the Ionians, one of whom, Anaximenes, had chosen air for his primary element. Diogenes endowed air with sentience and intelligence. "All creatures," he says, "live and see and hear by the same thing" (*viz.* air), "and from the same thing all derive their intelligence as well<sup>1</sup>." He thus made the air in us play an important part in the processes of perception and thought. From Alcmaeon he must have borrowed the idea that the brain is the central organ; the air in the sense-organs, the eye, the ear, the nostrils, transmitted the impression to the air in or near the brain. The common view that seeing takes place by the reflection of an image in the pupil he supplemented by postulating that this image must be blended with the internal air; otherwise, though the image is formed, there is no seeing. He pointed to the fact that, when the optic nerve is inflamed, blindness ensues because, as he thought, the admixture with the internal air is prevented. His account of hearing may be cited for the likeness it bears to that given in *De Anima*. "The animals which hear most acutely have slender veins, the orifice of the ear (like that of the nose) being in them short, slender and straight, and the external ear erect and large. For movement of the air in the ears sets in motion the internal air" [in or near the brain]. "Whereas, if the orifice be too wide, the movement of the air in the ears causes a ringing in them, and what is heard is indistinct noise, because the air upon which the audible sound impinges is not at rest<sup>2</sup>."

In the fifth century the evolution of successive systems came to a halt. The progress of enquiry had been marked by the foundation of new sciences like geometry and astronomy, both in a flourishing condition, and new arts, like rhetoric and dialectic. The bustle and unrest of the times was attended by a growing mistrust, not only of the old traditional religious and moral beliefs, but of the bewildering intellectual movement which in so short a space of time had put forward so many brilliant and contradictory speculations. The professional educators, whom we know as the Sophists, turned as a rule to practical interests and made humanism, literary criticism, erudition their main themes.

Protagoras.

Protagoras, the greatest of them, adopted a sceptical

<sup>1</sup> See Simplicius, *in Physica*, p. 151, 24—153, 24, Theophrastus, *De Sensibus*, §§ 39—48.

<sup>2</sup> Theophr. *De Sensibus*, § 41: cf. *De A.* 420 a 3 sqq.

attitude and maintained that man was the measure of all things, which, as interpreted by Plato, means that, as things appear to me, so they are to me, or the denial of objective truth. There were many sceptical currents in the sea of speculation on which Greece had embarked. The followers of Heraclitus pushed the doctrine of flux to an extreme. Things never are, but are always becoming, they have no fixed attributes. When we say that a thing is, we must in the same breath pronounce that it is not. There are always two of these fluxes, one the movement or change producing sensations, flux outside, the other the movement which receives the sensations, the flux of our senses. The result of the contact between them is that, for example, wood becomes white wood and the eye becomes a seeing eye. When the flux of Socrates well comes in contact with wine, the wine will be sweet, but, if he is ill, it will be sour. Both these statements will be true: in fact, all statements are true. What wine is depends entirely on the man perceiving it. There is no criterion of truth in external things, they change so rapidly. On the other hand, Gorgias of Leontini in his essay on Nature or the Non-existent hardly caricatured the position of the younger Eleatics when he put forward the thesis that, if anything existed, it could not be known, and, if anything did exist and was known, it could not be communicated. Such views as these or that of Euthydemus that falsehood is impossible are by no means universal among the Sophists, many of whom had no psychological or epistemological theories at all; and, where their views were sceptical, it was the scepticism not of one school, but of many. Aristotle justifies the revolt of the Sophists against philosophy, he holds that most of the leading Pre-Socratic systems tend implicitly or explicitly to the doctrine of Protagoras. Protagoras first called attention to the importance of the knowing mind in every act of knowledge. In the view of a plain man like Socrates all the systems were discredited and the question, what is knowledge, was for the time more urgent than the ambitious problems proposed by those who had sought to know the nature of the universe. Psychology can glean nothing from the ethical discussions of the historical Socrates. When he declared that virtue is knowledge, he was confessedly using the latter term as one which neither he nor his interlocutors could adequately define.

Plato in his writings is always talking about the soul, but not all that he says is intended to be taken seriously.  
 Plato. We must allow for the mythical element, and in

particular for his imaginative sympathy with the whole mass of floating legend, myth and dogma, of a partly religious, partly ethical character, which, as was stated above, found a wide but not universal acceptance at an early time in the Orphic and Pythagorean associations and brotherhoods<sup>1</sup>. The Platonic myths afford ample evidence that Plato was perfectly familiar with all the leading features of this strange creed. The divine origin of the soul, its fall from bliss and from the society of the gods, its long pilgrimage of penance through hundreds of generations, its task of purification from earthly pollution, its reincarnations in successive bodies, its upward or downward progress, and the law of retribution for all offences, these and kindred subjects the fancy of Plato has embellished with all the beauty and sublimity which the art of a lost poet could bestow upon prose. Such themes stir his imagination. His approval of ethical fiction is attested by his own words, but it would be the height of imprudence to infer that any part of his philosophy is bound up with his gorgeous poetical imagery. Plato never set about writing a treatise *De Anima*. We find anticipations of a science, but not the science itself. In each dialogue he has a particular end in view. He proposes to examine the doctrine of Protagoras or, it may be, the import of predication. Incidentally in the course of a long controversy we come across models of psychological analysis which for subtlety and insight have never been equalled. Such an analysis was something absolutely new. The psychical or mental states on which Plato fixed his attention had hitherto, when they were not ignored altogether, been confounded with their bodily concomitants: a mistake not unnatural, so long as both sensation and thought were regarded as changes in the body. In the *Theaetetus*<sup>2</sup> we find the following argument. We do not perceive by but through the senses. What we perceive through one sense we cannot perceive through another. Consequently, if we know something about both a sound and a colour, it cannot be known through sense. Now we do know many such things; that they are, that they are different from one another, that both are two things and that each is one. How do we know such facts? The soul apprehends them through itself without any sense-organs. Being and Not-Being, likeness and unlikeness, number, identity and diversity are not apprehended through sense, but through the soul alone. The soul apprehends the noble and the base, the good and the

<sup>1</sup> See Cornford, "Plato and Orpheus" in *Class. Rev.* xvii. pp. 433—445.

<sup>2</sup> 184 B—186 E.

bad, not through the senses, but by calculating in herself the past or present in relation to the future. All men and animals from the moment of birth have by nature sensations which pass through the body and reach the soul, but to compare these sensations in relation to Being and expediency comes with difficulty and requires a long time, much trouble and education. It is impossible to attain truth and know it without attaining Being; knowledge does not consist in affections of sense because we cannot by them attain Being. It is by reasoning about sensations that this is alone possible.

In the *Phaedo*<sup>1</sup> the Platonic Socrates undertakes to prove that learning is reminiscence, which indeed is implied by the fact that, if questions are properly put, the right answers are elicited, showing that the knowledge sought, the knowledge, *e.g.* of geometry, existed previously in the mind of the respondent. This proof is as follows. The picture of a lyre reminds us of the person who used the lyre, a picture of Simmias may remind us of Kebes or of Simmias himself, so that the reminiscence may be brought about either indirectly or directly. If it is effected directly and the object seen is similar to the object it recalls, we cannot fail to see how far the remembrance is exact. For instance, we affirm that there is an idea of equality which is called to our minds by our perception of sensibles which are equal. That this idea is something distinct from the equal sensibles is clear; for the sensibles may appear equal to one observer, unequal to another; but about the idea of equality no difference of opinion is possible. Now we are to observe that all sensible equals appear to us as falling short of the standard of absolute equality, which plainly shows that our knowledge of absolute equality is prior to our perception of the sensibles. And whereas (1) this sense of deficiency in the sensibles has been present so long as we have had any perceptions of them, (2) our perceptions of them date from the moment of our birth, it inevitably follows that our knowledge of the idea must have been acquired before our birth. Now this of course applies to all ideas as well as to that of equality. Since, then, we have obtained this knowledge, two alternatives are open: either we are born in full possession of it and retain it through life, or we lose it at birth and gradually regain it. The first must be dismissed on this ground: if a man knows a thing, he can give an account of it, but we see that men cannot give an account of the ideas: it

<sup>1</sup> 72 E—76 D. In the summary of the argument I have mainly followed that given by Mr Archer-Hind, p. 77.



follows then that the second alternative is true ; we lose this knowledge and all learning is but the recovery of it. And since our souls certainly did not acquire it during their human life, they must have gained it before our birth and at birth lost it. Many more passages might be cited to prove that Plato kept the mental process distinct from the bodily process and that it is the former which he sought to explain.

Though the various mental operations are often discussed and distinguished, yet we find no exhaustive classification of mental operations. The reason is obvious. The variation is due to the fact that each attempt at partial classification is made, as above stated, for a special purpose, to prove a particular conclusion in a particular dialogue. Thus in the *Republic*<sup>1</sup> the tripartite division into reason, passion and appetite is brought in to show the relation of justice to the other virtues, and this, again, whether subordinate to, or coordinate with, the analogy between the individual and the state, is a means to the determination of a perfect political constitution, which is said in the *Timaeus*<sup>2</sup> to have been the chief subject of the dialogue. Nor does this tripartite division itself tally either with that into knowledge, opinion (or sense-presentation) and ignorance<sup>3</sup>, or again, with the fourfold division into thinking, understanding, belief and conjecture (an expansion probably of the distinction between knowledge and opinion), which we find in other parts of the *Republic*<sup>4</sup>. In the *Sophist*<sup>5</sup> discursive thought is a dialogue of the soul with herself, opinion is the silent assertion of the soul in which this results, imagining is a combination of opinion and sensation. In the *Philebus*<sup>6</sup> Plato goes more into detail and distinguishes sensation, memory, imagination and recollection. When the affections of the body do not reach the soul, the state of the soul is said to be insensibility or unconsciousness. When the affections of the body are communicated through the body to the soul, there is sensation. The retention of such a sensation is memory, its non-retention, the fading of memory, is forgetfulness. The recovery of lost memories by the soul without the aid of the body is recollection. Later in the dialogue<sup>7</sup> the relation of memory to imagination is illustrated: the former is a scribe or recorder, what it records being propositions, opinions; the latter is a painter,

<sup>1</sup> 434 C—445 E.

<sup>2</sup> 17 B, C.

<sup>3</sup> 477 A sqq.

<sup>4</sup> 511 D, E, 533 E, 534 A.

<sup>5</sup> 263 E sqq. Cf. *Theaetetus*, 189 E, *Phileb.* 38 D.

<sup>6</sup> 33 C—34 C.

<sup>7</sup> 38 E—40 B.

whose glowing pictures excite hope. In this dialogue also there is a practical end, all these distinctions being subservient to the classification of pleasures as true or false. Similarly in a memorable passage of the *Theaetetus*<sup>1</sup> the introduction of two illustrations, one from a waxen block and the other from a dovecot or aviary, is incidental to a refutation of the thesis that knowledge is true opinion. But the similes in themselves are contributions to psychology of permanent value. That of the waxen block presents in its sum and substance the entire theory of sensation conceived as an impression from without, like the print of a seal upon wax, and the theory of memory as the retention of such impressions, the different degrees of retentiveness in individuals being ascribed to the size of the block, the quality of the wax and the number of impressions crowded together in small compass<sup>2</sup>. The other, that of the aviary, conveys in a striking manner the relation between memory and reminiscence, the latter being the deliberate recovery of lost impressions; at the same time it shows the relation between the mere possession of knowledge and its actual application or exercise.

The most comprehensive view of Plato's psychology is to be found in the *Timaeus*. He starts with reason or with  
 Sensation. the operations of intellect. The soul thinks. This process is first described as it goes on in the soul of the universe or universal soul and, because it is an activity, is compared with circular motion. The revolution of two circles, that of the Same and that of the Other, gives judgments of identity and difference, the two most important relations, and without such judgments there can be no knowledge. But this ceaseless activity of thought from time to time suffers disturbance, and the interference results in sensation. In the allegory the creation of particular souls follows upon the creation of universal soul, and it is to these particular souls, each united to a body, that the following description applies. When the revolutions of the immortal soul had thus been confined in a body, a body, as Plato says, "in-flowing and out-flowing continually," these revolutions, "being confined in a great river,

<sup>1</sup> 191 C sqq., 197 C sqq.

<sup>2</sup> The comparison of a present sensation with a previous impression implies some representative faculty; in this passage we hear of *ἐννοια* and *δῶξα*, but not of *φαντασία*. Plato often uses *ἐννοια* for free constructive imagination. It is curious to find that, for the sake of an Homeric allusion and perhaps under the influence of a false etymology, Plato substitutes *ἐνσημαίνόμενα εἰς τὸ τοῦ τῆς ψυχῆς κέαρ* (194 C) for *εἰς τὸν τῆς ψυχῆς κηρόν*. But it would be a mistake to infer that he here favours the heart rather than the brain as the organ of *sensus communis*.

neither controlled it nor were controlled, but bore and were borne violently to and fro. For great as was the tide sweeping over them and flowing off which brought them sustenance, a yet greater tumult was caused by the effects of the bodies that struck against them; as when the body of any one came in contact with some alien fire that met it from without, or with solid earth, or with liquid glidings of water, or if he were caught in a tempest of winds borne on the air." The body of the animal, be it remembered, is composed of the same four elements, air, earth, fire, water, with which the animal comes in contact in alien bodies, whether in the process of nutrition or in that of sensation. "And so the motions from all these elements rushing through the body penetrated to the soul. This is in fact the reason why these have all alike been called and still are called sensations<sup>1</sup>. Then too did they produce the most wide and vehement agitation for the time being, joining with the perpetually streaming current in stirring and violently shaking the revolutions of the soul, so that they altogether hindered the circle of the Same by flowing contrary to it, and they stopped it from governing and from going; while the circle of the Other they displaced....So that the circles can barely hold to one another, and though they are in motion, it is motion without law, sometimes reversed, now slanting, and now inverted....And when from external objects there meets them anything that belongs to the class of the Same or to that of the Other, then they declare its relative sameness or difference quite contrariwise to the truth, and show themselves false and irrational; and no circuit is governor or leader in them at that time. And whenever sensations from without rushing up and falling upon them drag along with them the whole vessel of the soul, then the circuits seem to govern though they really are governed. On account then of all these experiences the soul is at first bereft of reason, now as in the beginning, when she is confined in a mortal body<sup>2</sup>." The soul, according to this account, is in ceaseless activity, and such normal activity, or thought, is from time to time disturbed by sensation, which has a tendency to pervert right thinking into falsehood and error. We might compare the definition from the *Philebus* above summarised<sup>3</sup>, in which it is said that when the bodily affections pass through both body and soul and give rise there to a sort of shock or tremor not only peculiar to each, but shared

<sup>1</sup> Plato connects *αἰσθησις* with *αἰσθεῖν*.

<sup>2</sup> *Tim.* 43 A seq., Archer-Hind's translation.

<sup>3</sup> 33 D.

by both in common, the movement which body and soul thus share may properly be called sensation.

Plato started with intellect and thought. Rightly understood, he does not oppose body to soul, but rather sense to reason, as one faculty of soul to another. But what are the limits of sense and reason? To which should be referred the knowledge of relations of cause and effect, of good and evil? Sense, we are told in the *Republic*<sup>1</sup>, is sufficient where a thing does not tend to pass into or be confused with its opposite; where the data tend to become confused, sense is insufficient and we must appeal to intellect. What sense perceives confusedly thought thinks distinctly and in isolation. Sense at the best can only give opinion, but reason and true opinion are distinct "because they are different in origin and unlike in nature. The one is engendered in us by instruction, the other by persuasion; the one is ever accompanied by right understanding, the other is without understanding; the one is not to be moved by persuasion, the other yields to persuasion; true opinion we must admit is shared by all men, but reason by the gods alone and a very small portion of mankind<sup>2</sup>." Sense and thought are concerned with different objects, the particular and the universal. The defects of sense are not in the subject, but in the object, because the particulars of sense are in flux and have no fixed being. Protagoras held that sensible things have their so-called qualities only by acting or being acted upon and, as activity and passivity are always relative, no quality belongs to anything *per se*. We cannot say that they are *per se* anything in particular, or even that they are at all. They only become: things are always becoming, not being. When an object comes in contact with our sense-organ and interaction takes place, a sensation arises in the organ and simultaneously the object becomes possessed of a certain quality. But the sensation in the organ and the quality in the object are results which are produced only by the contact and last only as long as it lasts. In this doctrine of Heraclitus and Protagoras Plato acquiesced, so far as it relates to sense and sensibles. The testimony of Aristotle on this point is explicit<sup>3</sup> and the dialogues confirm it. But, instead of concluding with Protagoras that all presentations are relatively true and that there is no such thing as objective truth, he drew a different inference, viz. that, if there

<sup>1</sup> 523 A sqq.

<sup>2</sup> *Tim.* 51 E, Archer-Hind's translation.

<sup>3</sup> *Metaph.* 987 a 32 sqq., 1078 b 12—17.

is such a thing as knowledge, which he firmly believed, its object must be an intelligible object and an universal.

The process of sensation in the separate bodily organs is thus described in the *Timaëus*. "When that which is naturally mobile is impressed by ever such a slight affection, it spreads abroad the motion, the particles one upon another producing the same effect, until, coming to that which is conscious, it announces the property of the agent: but a substance that is immobile is too stable to spread the motion round about, and thus merely receives the affection, but does not stir any neighbouring part; so that, as the particles do not pass on one to another the original impulse which affected them, they keep it untransmitted to the entire creature and thus leave the recipient of the affection without sensation. This takes place with our bones and hair and all the parts we have which are formed mostly of earth: while the former conditions apply in the highest degree to sight and hearing, because they contain the greatest proportion of fire and air<sup>1</sup>." For the process of vision Plato adopts with modifications the theory of Empedocles, for the process of hearing that of the Pythagoreans. As to smell, he holds that odours cannot be classified according to kinds. For no element in its normal state can be perceived by smell, because the vessels of the nostrils are too narrow to admit water or earth and too wide to be excited by air or fire. They can thus only perceive an element in process of dissolution, when it is being liquefied or decomposed or dissolved or evaporated. The object of smell, then, is either vapour, which is water changing to air, or mist, which is air changing to water. The only classification we can make is that scents which disturb the substance of the nostrils are unpleasant, while those which restore the natural state are pleasant. In his account of tasting Plato makes the sensation depend upon the contraction or dilatation of the pores of the tongue by substances that are dissolved in the mouth, the peculiar effect of the principal flavours being briefly indicated. He made the flesh the organ of touch and, considering the various tactile sensations as relative to the tangibles, proceeds to explain what constitutes bodies hot and cold, hard and soft, heavy and light<sup>2</sup>.

<sup>1</sup> Cf. *De A.* 425 a 3—7, 435 a 11—b 3.

<sup>2</sup> For the various senses see *Tim.* 45 B sqq., 61 C sqq., 65 C sqq., 66 D sqq., 67 A—68 D. See also Theophr. *De Sensibus*, §§ 61, 83—91.

I have dwelt at what some may think inordinate length upon Plato, because in psychology, as elsewhere, making allowance for the fundamental difference between the two philosophers, we find nothing in Aristotle but the development in a systematic form of the Platonic heritage. It was the disciple's task to maintain on independent grounds the essentials of the master's doctrine on the subject of the soul, and to do this in face of the widely conflicting views and the general uncertainty which, as the foregoing sketch sufficiently shows, were prevalent at the time. With the conscious or half-conscious materialism of his predecessors Aristotle has no more sympathy than Plato and, as compared with this point of agreement, the differences between them count for little, however much Aristotle may exaggerate them. In the criticism which he passes upon the *Timaeus*<sup>1</sup> he affects to take the narrative literally. The point at issue is whether the activity which both Plato and Aristotle ascribe to the thinking soul can justly and reasonably be called a movement. The doctrine of the two philosophers is on all important points the same: they agree that there is an immortal soul and a mortal soul, that the immortal element thinks always and that thinking must belong to its essence. What Plato calls "movement" is familiar enough in Aristotle as "energy" or "activity". If Plato would only say "energy," there would seemingly be no room for objection. But in the tenth book of the *Lates*, the work of his old age, when he may have been presumed to have had some acquaintance with the views of his disciple, Plato obdurately refused to say "energy," and by his classification of the ten species of motion assimilated physical movement and change to the only activity which in his view had reality, the "movement" of thought<sup>2</sup>, defining the soul as that which is able to move itself. And after his death Xenocrates persisted in attributing "movement" to the number which is the soul. At this point a brief summary of the first part of Aristotle's treatise may be the best means of indicating the way in which the writer approaches his subject and the conclusions at which he arrives.

Aristotle's  
treatise.

At the outset, he says, we wish to ascertain the nature or substance, and the accidents, of the soul, which is a principle of

<sup>1</sup> *De A.* 406 b 26 sqq.

<sup>2</sup> "Breaking Plato's metaphor on the wheel," to cite a happy phrase, Aristotle slips back occasionally into the use of the metaphorical term himself, as in *Metaph.* 1072 a 30. Compare my note on 433 b 17.

<sup>3</sup> 893 B--895 A, 895 E sqq.

animal life. A few preliminary enquiries are suggested. Is soul "something"? Substance? Or quality? Or to which category does it belong? Is it potentially existent or is it an actuality? Is it divisible or without parts? This suggests the further question, Is it homogeneous in all species of animals? If not, are the differences between souls generic or specific differences? If it is without parts, it must be variable, there will be many sorts of soul. If it is homogeneous, the homogeneous soul must be made up of different parts. Ought we, then, to start with the whole soul or with the parts, ought we to study the parts first or their functions, and, if the functions, why not first the objects? As an apology for not deciding, it may be remarked that, while in order to know the properties of a thing, we ought to know its essence, yet knowledge of properties contributes to knowledge of essence: in fact, the one is involved in the other.

The attributes of the soul cannot properly be separated from those of the body. The one that seems most separable is thinking: but, if this is akin to imagining or if it involves an image, neither is thinking separable. If any attribute is peculiar to the soul itself, then soul may be independent of body; if not, soul cannot be so independent. The attributes of soul are notions or forms in matter and, as such, fall within the province of the physicist or natural philosopher, while the dialectician studies and defines their form apart from their matter. Here is the point of difference between the objects of physics and of mathematics: the attributes of soul as such, e.g. fear and anger, are inseparable from the physical matter of the animals to which they belong; the mathematical objects, e.g. line and surface, though really inseparable, are separable in thought from the concrete things to which they belong.

From this discussion of method we pass to consider the opinions of our predecessors. The characteristics of animate being are motion and sensation. Hence some have regarded the soul as *par excellence* the cause of motion, Democritus, who thought it fire, and Anaxagoras, being typical instances. All assumed that if a thing causes motion, it is itself moved. Others, again, start with the assumption that like is known by like and infer that the soul is composed of all the elements, whether they are one or many: Empedocles that it is composed of earth, air, fire and water; Plato of number. All definitions may be reduced to three: that it causes motion, is perceptive, is incorporeal. The last characteristic leads those to choose the finest matter, who acknowledge none but

corporeal elements. Subsequently it is objected that if the soul is a fine matter, as the soul is in all the sensitive body, we have two bodies in one.

The application of the idea of motion to the soul leads, it is argued, to absurdities. There are four kinds of motion, locomotion, qualitative change, decay, growth, and our enquiry is whether the soul is moved in and through itself, and not as sailors in a ship. All kinds of motion are in space; therefore, if the soul is moved, the soul must be in space. As it moves the body, it would naturally move like the body; and in that case it would go up and down in, and in and out of, the body. In general, we contend, the soul does not move the body, as Democritus supposed, by physical agency, but by means of purpose of some sort, that is, thought. The most thorough application of motion to explain soul, and in particular the soul which thinks, was made by Plato in the *Timæus*, and this is criticised at some length. Like other theories, it neglects the relation between soul and body in virtue of which the soul acts, the body is acted upon, the soul moves and the body is moved.

Another definition of the soul makes it a harmony or blending of opposites. This notion may be applicable to health or any bodily excellence, but will not apply to the soul. Harmony will not cause motion. Harmony means either (1) a close fit or adjustment of bodies, or (2) the proportion in which elements are mixed. It is needless to show that the first meaning is inapplicable, there are so many fittings of the limbs. As to (2), in flesh and blood the elements are mixed in different proportions; which mixture is the soul? Returning to motion, we conclude that the only motion of which soul admits is motion *per accidens*, due to motion of the body, as whiteness is moved when a white body is moved. A stronger argument than any our predecessors have adduced is derived from the attributes of the soul, such as pain and pleasure, fear, anger, and other emotions, sensation and thought, all of which are commonly believed to be movements. In them, however, the soul is not moved: it is merely the cause of movement in the heart or some other bodily part. It would be better to ascribe these attributes to the man and say that he perceives or thinks or feels pleasure and pain with his soul. This leads to an interesting digression on intellect, followed by a refutation of Xenocrates, who defined the soul as a self-moving number. How can the attributes which are known to belong to soul possibly be deduced from such a definition? It will not afford even the slightest hint of them.



The same argument had previously been used against the definition of soul as a harmony.

Two characteristics of soul, (1) that it moves itself, (2) that it is composed of very fine matter, have now been dismissed. Against the third, that it is composed of the elements and that like knows like, it may be urged that then the soul ought to have in it all compounds, all categories. Moreover, a unifying principle would be needed<sup>1</sup>. The soul is not to be held divisible into parts independent of each other, for in that case what keeps its parts together? That must be the real soul. Again, as the whole soul keeps the whole body together, each part of the soul should keep a part of the body together: but we can assign no such function to intellect.

Book II. begins by defining the soul. We premise that of entities to which categories are applied substance is one, where by substance we mean either (1) matter, which is not yet anything in particular, or (2) form, which makes it something in particular, or (3) the union of matter and form in the particular thing. Under substance in the last sense is included a natural body partaking of life. What we mean by life is the power of the body to nourish itself and to grow and decay of itself. Body is clearly matter here, therefore soul is form. And, if for matter and form we substitute potentiality and actuality and distinguish the first stage of actuality, corresponding to knowledge, from the second, corresponding to the exercise of knowledge, the soul will be the first actuality of a natural body furnished with organs, or of a body that has in itself the principle of movement and rest. Thus soul is the quiddity or formal essence, to which we have analogies in the cutting power of the axe and the visual power of the eye, both actualities in the first degree, as contrasted with actual cutting and actual seeing, which are actualities in the second degree.

The definition thus found is the most comprehensive possible, applying to life in all its various forms, (1) intellect, (2) sense, (3) locomotion, (4) motion of nutrition, growth and decay. Plants exhibit life in its last form only. Animals, in addition to this, have sensation. Of the different senses touch is indispensable. Experiment shows that most of these vital functions are really inseparable from one another, though at the same time separable in thought. Whether this holds of intellect also it is not so easy to

<sup>1</sup> Aristotle's own view is that the sense-organs are composed of the elements, in touch all are blended. But sense is not this corporeal organ itself, but rather the character or power which resides in the organ.

decide. If to these vital functions be added appetite, which clearly is present where sensation is, a certain gradation can be recognised. They may be arranged in an ascending series. The lower can exist without the higher, but the higher in mortal creatures always involve the lower. And there is a similar gradation in the senses. It seems, then, that there is one definition of soul exactly as there is one definition of rectilinear figure. Alike in figures and in the various types of soul, the earlier members of the series exist implicitly and potentially in the later; the triangle is implicit in the quadrilateral and the nutritive faculty in the sensitive. The definition does not dispense us from investigating in detail what is the soul in the plant, in the brute, and in man.

Having reached this point, we naturally expect that each of the four main vital functions, nutrition, sensation, intellect, locomotion, will be investigated in detail; and this in fact is what the writer proceeds to do. Nutrition, growth and decay and reproduction, are dealt with briefly in Book II., c. 4; sense-perception at very great length, Book II., c. 5—Book III., c. 2; and imagination, which is intimately connected with sense, in Book III., c. 3; upon imagination follows intellect, Book III., cc. 4—8; and, lastly, the principle of progressive motion in animals, which is identified with appetite, occupies us in Book III., cc. 9—11. The treatise ends with an attempt, from the standpoint of teleology, to answer the question why the various forms of life occur in this ascending scale.

Aristotle himself was not consciously constructing a new science. His discussion of the soul was forced upon him when, traversing the wide domain he had set apart for his science of nature or physics, he passed from inorganic to the borders of organic life. The method of science laid down in the *Organon*, and hitherto pursued, is a method partly inductive, partly deductive, aiming to establish rational theories on empirical data and often falling short of its aim, because either the data were at fault or the theories inappropriate, or because there were defects in both. Natural science has to do with nature and with natural bodies, which by common consent are pre-eminently substances, sensible substances. Nature is itself a cause of things, the power in the things themselves which makes them what they are. Its characteristic is that, like human intelligence, it devises means to ends<sup>1</sup>. In this respect natural bodies or natural substances may be compared with the products of art and skill, but in the former

Method.

<sup>1</sup> 415 b 16 sq.

case the cause is, and in the latter case is not, in the product itself. We wish to know what are (1) the concrete natural substances, (2) their properties, (3) their physical changes, (4) the causes of these changes. If we could answer these questions, we should know the ends of nature in making concrete substances, the means used to realise these ends, the form and matter of which the substances consist. In logic we proceed from one determination to another. Psychology is concerned with mental acts or operations. In some of these operations we are conscious of a process; for example, in operations of reason we know how we reason, by what steps we advance. To search for a method is to aim at determining the order and arrangement in which these processes follow one another in any science. In geometry certain principles are assumed and necessary conclusions are deduced from them. Induction generalises from known particulars in order to obtain principles. Both induction and deduction may be combined in a more comprehensive method which, after establishing general principles, deduces derivative laws and verifies the particular conclusions which follow from them. But it may be impossible to apply this complete method directly in its simplicity. The effects, which are conclusions, may be known, while the causes are to seek. If so, it is necessary to infer backwards and discover the causes from the effects. The early progress of mathematics and astronomy, with their applications to optics and harmonics, led to the belief, which Plato endorses, that deduction is the method of scientific research. Aristotle agreed for pure mathematics, while in applied mathematics he regarded induction from the materials collected as, strictly speaking, lying outside of the science and subsidiary. But in the natural sciences, where we rise from effects to causes, a thorough description of facts is a necessary preliminary to the discovery of the ultimate principles, and the inverse method must be applied. The method of astronomy, we are told, was to collect the facts, the phenomena, and from them to deduce astronomical laws. The whole method is summed up with convenient brevity thus: "In every department of nature we must first ascertain the facts and then after that state the causes." The task to which the *History of Animals* is devoted is thus described: "First let us ascertain the existing varieties of animals and the properties of each, and after that we must try to discover their causes. This is the natural method which puts the collection of material first<sup>1</sup>."

<sup>1</sup> *Anal. Prior.* I. 30, 46 a 19 sqq., *De Part. An.* I. 1, 640 a 14, *Hist. An.* I. 7, 491 a 8 sqq.

Characteristic of Aristotle's mind is the notion that some things can be got at both deductively and inductively: it is the consilience of fact and theory. The soul being a part of nature, psychology must needs be a branch of general physics, as all preceding thinkers, including Plato, agreed<sup>1</sup>. The presuppositions of Aristotle's metaphysics refer life to a cause. Vital phenomena, wherever found, are sufficiently alike in their manifestations to justify the assumption of one such cause. The treatise, then, is a preamble to all parts of the system dealing with plants, or animals, or with yet higher beings, if endowed with life. As one of the series of biological works, it stands in the closest connexion with the tracts known as the *Parva Naturalia*, with the morphological treatise *De Partibus Animalium*, and with that upon embryology, *De Generatione Animalium*. The part which the enquirer professes to take calls for very careful demarcation. It is impossible to say what contributions, if any, Aristotle himself made in the field of psychology: the presumption is that they were but small. The evidence of his dependence upon Plato for all that relates to psychical phenomena is so overwhelming<sup>2</sup>, so constant. Possibly the repeated illustrations from zoophytes or stationary animals and from worms, which give signs of life after they have been severed into parts<sup>3</sup>, are original; but in the main his facts are precisely the facts of his predecessors, the scantiest stock now at the disposal of any ignorant layman. Speculation had outrun observation. Nor is there any complaint of the scantiness of the data. No. Such as they are, they have already called forth too numerous and too divergent explanations. The writer's modest aim is by preliminary discussion to settle a few, just a few, fundamental questions as to the nature and attributes of the one principle of life and mind.

Aristotle's enquiry is founded on his metaphysics. It is the business of natural science to discover form and matter in natural substances. Every animal, every plant is a natural substance, compounded of body, which is matter, and soul, which is form, and the science of nature has therefore to investigate both body and soul. Yet here a proviso is needed. Natural science does not necessarily treat of the whole

Body and  
soul.

<sup>1</sup> *Metaph.* 1026 a 5, *De Part. An.* 1. 1, 641 a 17 sqq.; cf. Plato, *Phaedrus*, 270 c sqq.

<sup>2</sup> This holds for *De Anima* at least; but Aristotle's real merit comes out conspicuously in the tracts *De Somno* and *De Memoria*.

<sup>3</sup> e.g. 410 b 19, 432 b 20, 411 b 19 sqq., 413 b 16 sqq. Aristotle may also be credited with the simple experiment of placing a sensible object upon the sense-organ itself as used to show the necessity of a medium, 419 a 12, 421 b 14 sqq., 423 b 17 sqq., and the appeal to experiment, as e.g. 421 b 19.

soul. Wherever soul as form is in matter, wherever it employs a bodily organ, we are still in the domain of natural science; but anything included under soul which is independent of the body and which cannot be thus defined must be reserved for metaphysics<sup>1</sup>. The meaning which Aristotle attached to independence or separate existence must be grasped, if we would understand what he conceived by a substance or thing. Primarily this separate existence is the attribute of concrete particulars presented to sense in the external world. They are bodies locally, numerically and by magnitude separate. From them the conception is transferred to whatever the mind thinks as distinct, and even for immaterial notions Aristotle has no other formula. They, too, like concrete bodies, are described as being in time, in space and in conception separate or distinct<sup>2</sup>. In reducing soul to the logical essence or form of body Aristotle, according to his own presuppositions, so far from favouring materialism, secures once and for all the soul's absolute immateriality. The living body has independent existence, has its own form and its own matter. Even a dead body or an inanimate thing is something existing independently, to which we can apply the pronoun "this". But the soul does not exist in the same way. Nor, again, is it a thing capable of being added to or subtracted from another thing, the body, any more than form in general is a thing which can in mechanical fashion be united to and separated from its appropriate matter<sup>3</sup>. If a brazen sphere be melted down, the brass remains. It is still "this" something, "this" mass of metal; but we cannot then say of its spherical shape that it is "this" anything or that it any longer exists. The lifeless body is like the eye which cannot see or the axe which is spoilt for use<sup>4</sup>. We may apply to them the same names as before; but, as the nature is no longer the same, the application is irrelevant, misleading, equivocal. But, though the lifeless body is still a concrete particular and a substance, the soul apart from its relation to the body is no such thing at all. Now the soul as form stands to the body as matter of the concrete individual precisely as the spherical shape to the brass, as vision to the eye, as cutting power to the axe. In every case the form is a quality predicable of the matter. But the

<sup>1</sup> *De Part. An.* I. 1, 641 a 14—b 10.

<sup>2</sup> *Metaph.* 1016 b 1—3.

<sup>3</sup> Biological writers now avoid the ambiguity attaching to the use of the term "body" in two distinct senses by means of the term "organism."

<sup>4</sup> Cf. *Metaph.* 1045 b 12 sqq.

<sup>5</sup> 412 b 10 sqq.

body is not predicable of the soul, we cannot explain the soul in terms of body or make it a material thing, however fine the materials. On the contrary, we must explain body in terms of soul. It is form which determines and we only know a thing as determined. Primary matter, the absolutely indeterminate, is in itself unknowable<sup>1</sup>. Therefore, if we would know the living body, we must study its activities and operations and all the attributes which it acquires in virtue of soul. Soul and body, then, are not two distinct things, they are one thing presenting two distinct aspects. The soul is not body, but belongs to body<sup>2</sup>; it is not itself a concrete particular, although its presence in the body makes a concrete particular; it resides in a body and, what is more, in a body of a particular kind, furnished with the means whereby the functions of the soul can be exercised. The relation of matter to form in the particular thing is one instance of a relation of higher generality, that between potency and act<sup>3</sup>, between the power to become and the realisation of that power in actuality. Before it is, a thing may be or may not be, and when it is, if it has the power to act, it may act or it may not act. Now body stands to soul, and matter to form in general, as the potential to the actual which has reached the first stage and already is. In other words, the soul is the power which the living body possesses and the lifeless body lacks. This is first actualisation or first entelechy. Again, the actual possession of faculties unused still stands to the exercise of these faculties in the relation of potency to act. Life itself, the use of actual power, is the second stage, energy. The actual use must be preceded by actual power. Soul is actual power to live, but is not life. In Plato body is opposed to soul. The body could be trained to obey the soul by gymnastic and music. In Aristotle the body is the natural instrument of the soul, and so the body into which a particular soul enters must be adapted to its use. This fact renders the Pythagorean idea of transmigration absurd<sup>4</sup>. Soul is likewise both the final and efficient cause of the body<sup>5</sup>. It is the final cause, because the soul is merely means to vital power and life; it is the efficient cause not only in the obvious case of progressive motion, but also in all the various changes which the body undergoes in the exercise of vital functions, including nutrition, growth, sensation.

<sup>1</sup> *Metaph.* 1036 a 2—9.

<sup>2</sup> 412 a 9 sqq., a 22 sqq., b 27 sqq.

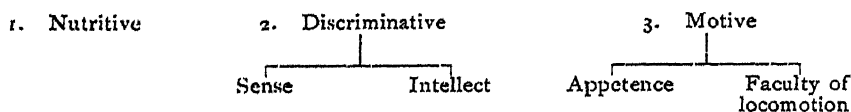
<sup>4</sup> 407 b 20—26.

<sup>2</sup> 412 b 6 sqq., 414 a 19 sqq.

<sup>5</sup> 415 b 8 sqq.

Classification  
of vital  
powers.

Such, in brief, is the description of soul considered in and by itself, including the various separate powers, which are assumed to account for the varieties of vital and psychical operations. The great problem is how this multiplicity of acts or operations should be classified. Plato in some dialogues divides soul into parts, an immortal part, reason, and two mortal parts, passion and appetite. His pupil is more cautious. He does not go beyond the supposition of certain powers or faculties. In one sense, he says, this division into powers is illusory, for the powers of soul are really infinite in number<sup>1</sup>. But he contends that his own groups are convenient groups. Faculties, like every other basis of classification, are only means to an end. Plato, he thinks, should have added the nutritive and sensitive faculties. Desire, again, runs through all operations: there is the rational wish, the angry impulse and the instinctive appetite. Here at least it is clear that the different powers are but different capacities of the single soul. Yet his ignorance of the bodily conditions of thought and his consequent assumption of a separable and immortal part of soul leave Aristotle much in the same position as Plato. In order to get a clear view, special stress must be laid upon the statement that the powers of soul are arranged in an ascending scale<sup>2</sup>. In mortal creatures, at all events, the higher faculty always presupposes the lower, without which it cannot exist<sup>3</sup>. The lowest power, that of nutrition and propagation, is common to animals with plants; in plants it exists alone. Animals have sensitivity in addition: of the senses they must possess at least touch. So far we are on safe ground. From this point we may simplify in one of two ways. In the third Book the two faculties, sense and intellect, tend more and more to be conjoined as the judging faculty, while appetency, which in its lowest form is implied by sense<sup>4</sup>, is made the principle on which progressive motion depends<sup>5</sup>. These considerations lead to the following scheme:



On the other hand, intellect is said to be the highest of all our powers, and the lower forms of appetency, as well as the power

<sup>1</sup> 432 a 22 sqq., 433 b 1-5.

<sup>2</sup> 415 a 1-11.

<sup>4</sup> 414 b 1 sqq.

<sup>2</sup> 414 b 28-415 a 1.

<sup>5</sup> 433 a 21 sqq.

of progressive motion, are associated with sense, while an intermediate place must be found for the imaginative faculty. These considerations suggest the following table of faculties:

1. Nutritive; 2. Sensitive, which is also appetitive; (this is in most animals joined with) 3. Locomotive; 4. Imaginative; 5. Intellectual.

In the ascending series of vital functions we start with the lowest, which constitute the sole life of plants and are an indispensable element in the life of animals. Their isolation from all others in the vegetable kingdom facilitates their study. We accordingly assume<sup>1</sup> a power of self-nourishment, the nutritive faculty. But we must be careful to remember that this faculty has also to account for growth, decay and reproduction; by which last it partakes, so far as it can, of immortality, the species of plants, as well as of animals, being imperishable, though the individual members of the species perish. If we are to define things by their end, the primary soul, the soul of the plant, is that which is capable of reproducing the species. But if the individual plant or animal is to be capable of this, it must be kept alive. Hence in a certain sense the subsidiary functions of nourishment and growth are even more important than the end to which they are means. Food or nutriment is the correlative object of the nutritive faculty, and we must determine how things are nourished. It was a common opinion that contraries are nourished by contraries. This is generally, but not always, true of the elements or simple bodies. Fire, Aristotle points out, is nourished by water, but not water by fire. Others said like was nourished by like. These two views can be reconciled. Undigested food is unlike, but food, when digested, has been assimilated to that which it nourishes, and then like is nourished by like. Nutrition, then, is motion or change, and it is easy to discover the movent, the instrument and the moved. Soul is the nourisher, food the instrument of nutrition, body the nourished. Vital heat, as well as food, is employed by the soul in the process, and we have an analogy in the steersman, who employs his hand to move the rudder with which he steers the ship.

Little suspecting what advances botanical science was to make, Aristotle denied that plants have sensitivity. He admits that they are affected by heat and cold, but only, he argues, as inanimate things are affected; that is, they are simply heated and cooled.

<sup>1</sup> II., c. 4. Cf. also 411 b 19—30, 413 a 25 sqq., 424 a 32 sqq., 432 b 17 sqq., 434 a 22—30, 435 a 25 sq.



They cannot receive the form of objects without the matter, and this because they have no organ in which the elements are so blended as to give the means of discriminating, say, cold and heat. When a plant touches an object, there is merely physical contact. Thus the excessive preponderance, as Aristotle supposed, of "earth" in the structure of plants precludes sensation, because it precludes the proper blending of the elements, which would be necessary to make organs of sense. The insensibility of certain tissues of the body, e.g. bones, sinews, hair, he explained in a similar way as due to the presence in them of too much earth: and in this erroneous view he followed Plato.

The characteristic of animals when contrasted with plants is that they not only live, but have the power to perceive, which the Greeks regarded as essentially a cognitive power. They thought that we cannot perceive by sense without perceiving something, and interpreted this something objectively, as something which exists. The distinction so important for modern psychology between sensation and perception had not yet received much attention. For Aristotle, as for his predecessors, the main question is, in what does this operation of perceiving consist and how does it take place? We must describe the various kinds of perception and determine how perceiving is related to thinking, since both are cognitive. One distinctive mark is that by sense we perceive individuals<sup>1</sup>. But we have much knowledge of individuals which the five senses cannot give. Does, then, all this knowledge come from sense, or must it be referred in part to intellect, or must we invent new faculties or powers to account for it? Suffice it to say that, whenever perception takes place, an universal is perceived, but not directly and *per se*, only *per accidens*<sup>2</sup>. Directly sense perceives only "this," just as directly sense perceives it here and now. The operation of perceiving something existent is made by Aristotle to depend on his own physical theories of motion, of efficient cause and of essential form. One species of motion he defines as the production of an effect in matter by an efficient cause, as, e.g., the production of an impression upon wax by a seal or of an image in a mirror by a candle. Motions may be classified according to the categories as qualitative, quantitative or spatial, and the species of motion to which sense-perception is referred is the first species or qualitative change, the alteration or transformation which a thing undergoes

<sup>1</sup> 417 b 19 sqq.

<sup>2</sup> *Anal. Post.* I. 31, 87 b 28 sqq., II. 19, 100 a 17; *Metaph.* 1087 a 19 sqq.

when it loses certain qualities and acquires new ones, remaining itself numerically the same. The form or essence without the matter is transmitted by the efficient cause or agent to the patient upon whom it acts, as when fire transmits heat to fuel. The form or essence is one in all the things thus affected. The one universal heat is the same wherever actually found, in fuel ignited, in water heated or in molten iron. Applying this physical theory, we should define the particular motion or qualitative change which we call perceiving by sense as the production of an effect in a particular part of the body, which we call a sense-organ, by a particular external thing, which we call the sensible object. But this is inadequate. Plants receive heat and cold and the air receives odour, but they do not perceive<sup>1</sup>. It is not enough, then, to say that perceiving is undergoing some affection or being acted upon. Besides, what is affected? Not the single organ, but the percipient as a whole; and we have seen that the animal is a particular case of composite substance, the body being matter, the sentient soul form. Now it is with the soul that we perceive, as it is with the soul that we live and think<sup>2</sup>. Let us, then, amend the definition. Perception is an alteration in the soul. It consists in the production by an external object of an effect in the sensitive faculty. This effect is the reception of the form, without the matter, of the external thing perceived<sup>3</sup>.

Thus Aristotle is able to decide between the conflicting views of his predecessors, according to some of whom like acts upon like, while Heraclitus and Anaxagoras insisted that for any change to be perceived object and percipient must be unlike. As we saw about nutrition, both are right and both are wrong. The *perciendum* is unlike, the *perceptum* is like, that which perceives it<sup>4</sup>, for, when the process of perceiving takes place, both the external thing which causes it and the percipient affected by that cause have in the very act one common form which, like every universal, is the same wherever it is found. That which sees is in the act of vision in a way coloured<sup>5</sup>, for it receives the same one form of colour which existed and exists in the coloured object perceived. But we may go a step further. Where one thing acts upon another, both the action and its effect reside in the patient, in that which is acted upon. Previous to their interaction, if they are physical bodies, the one is merely a potential agent, the other is

<sup>1</sup> 424 a 32—b 18.

<sup>2</sup> 414 a 12 sq., 408 b 13—18.

<sup>4</sup> 416 b 35, 417 a 18—20, 418 a 3—6.

<sup>3</sup> 424 a 17 sqq.

<sup>5</sup> 425 b 22.

merely a potential patient, whatever else they may be actually. Applying this to perception, the external thing is always perceptible, a *percipiendum*, a potential *perceptum*, the sense-faculty is always potentially percipient: but in the process of perceiving the potential in both cases has been transformed into an actual. The eye, e.g., becomes a seeing eye, the whiteness whiteness perceived, and these two actualities reside in that which is passively affected, in the sense. In other words, the actuality of the sensible object is one and the same with (not merely similar to) the actuality of the perceiving subject<sup>1</sup>, sense and sensible having in the act of perception one and the same essence, since the whiteness seen in the object is transferred to the visual faculty and, being an universal, a form, is one and the same, wherever it resides. Is this, we ask, a doctrine of relativity? Most certainly not. The followers of Protagoras are supposed to argue that, if the sensible quality is alone real, nothing would exist at all unless there were living beings to perceive, for without them there would be no perception. I grant, Aristotle replies, that in the absence of living beings there would be no act of perception, no affection of the percipient. But for all that, it would be impossible to get rid of things, which are potential causes of perception even when they are never perceived. For perception does not perceive itself, there is something beyond the perception; and this must be logically prior to the perception, since whatever causes motion or change must be prior to that which it moves or changes: and this is not the less true because sensible object and percipient are relative to each other<sup>2</sup>. In other words, the object perceived actually exists with its own form, its own qualities, even when it is out of all relation to a percipient. And similarly we may conceive a percipient out of all relation to an object, none such being actually present. It is then what it always was, a power of perceiving, a faculty of sense, mere sensitivity.

These considerations apply most emphatically and most naturally to sense regarded as a whole, a single power which resides in the body of the animal, likewise regarded as a whole. But this power of perceiving is localised and pluralised. Wherever a part of the body subserves a particular end or function, it becomes an organ or instrument, and the general power of perception, as specialised in the five senses, employs its separate sense-organs,

<sup>1</sup> 425 b 26 sqq.

<sup>2</sup> *Metaph.* 1010 b 30—1011 a 2.

the eye, the ear, the nostril and the organs of taste and touch. For the detailed account of the modes in which they are employed, the medium which they necessarily imply and their special objects or provinces, the reader must be referred to Book II. cc. 7—11<sup>1</sup>. Here there is space only for a few general remarks. First, the parallelism between sense as a whole and the single special sense, e.g. sight or touch, must never be overlooked. "As the sensation of a part of the body is to that part, so is sensation as a whole to the whole sentient body as such<sup>2</sup>." Thus the sense of vision presides over its own special province of colour, bounded by the opposites, white, black, and embracing every intermediate shade<sup>3</sup>. The sense of touching has its special province, or rather provinces, especially temperature and resistance, bounded the former by the extremes of hot and cold, the latter of hard and soft, and including all varieties of temperature and resistance intermediate between the extremes in each province. Vision resides in the eye, touch in the internal organ of touch (probably the heart) or in the intra-organic medium, the flesh, according as we adopt the more scientific or the popular standpoint. To perceive is to undergo a qualitative change. In order, then, to become assimilated to the object, the organ must be capable of undergoing such change in the direction of either extreme or of any of the intermediate grades between these extremes. If it could not respond to the stimulus, as modern psychologists would say, at any point in the scale of colour, of temperature or of resistance, the failure on the part of the organ would be attended by mal-perception or non-perception on the part of the faculty. This is brought home to us whenever we try to employ our senses upon objects either altogether out of their range or such that the perception is at-

<sup>1</sup> As might be expected, the contributions to the physiology of the senses, and especially vision, are worthless. See Beare, *Greek Theories*, Introduction; also pp. 9—11. The mathematical researches of the Pythagoreans finally developed a more correct doctrine of sound and its propagation, to which the spurious treatise *De Audibilibus*, probably by Heraclides, bears testimony. See Jan, *Musici Scriptores*, pp. 50—57, who also traces (pp. 130 sqq.) to Archytas some of the theories found in Plato's *Timæus*. For the helplessness of the Greeks in empirical science cf. Zeller, *Aristotle*, I. p. 443, Eng. Tr. From our superior knowledge we can afford to smile at the naïve simplicity, the sheer audacity, which professes to explain growth, while knowing nothing of cells, discusses sensation and movement without understanding the nature and functions of the nervous system, and treats fire as an element in blissful ignorance of the chemical changes which go on during combustion. If Aristotle had been in possession of a microscope, it is probable that he would have made no better use of it than did Huxley's unsophisticated correspondent (see *Life of Huxley*, vol. II., pp. 365 sqq.).

<sup>2</sup> 412 b 23—25.

<sup>3</sup> 426 b 8 sqq., 422 b 19 sqq.

tended by pernicious effects, when we try to see in the dark or to look at the noonday sun or to plunge the hand in boiling water or to touch the air<sup>1</sup>. Now what is it which justifies our expectation that in normal cases a sensible object, when present, will be perceived? What are the physical or physiological grounds on which, with the science of his day, Aristotle based this belief? He accepted from Empedocles the false physics which resolved all bodies into four elements, air, earth, fire, water, with four primary qualities, hot, cold, wet, dry. These elements are found in their compounds in the outside world. They are also found all four mixed (we might say, chemically combined) in the tissues or homogeneous parts of animal bodies, of which, again, the heterogeneous parts or organs of animal bodies are composed. Hence there is a new application of the old maxim that like is known by like. The characteristic of each object perceived depends not so much upon the materials which enter into its composition as upon the combining ratio of those materials, which constitutes its form. When Empedocles resolved bone into definite proportions of his four elements, he was not far from realising that this combining ratio is the form which makes bone what it is<sup>2</sup>. So, too, with the sense-organ. It also has its combining ratio which constitutes its form, and this form, again, is the faculty residing in the organ. Hence sense as a whole, and each special sense, is a form, because it is the determining proportion or combining ratio of the tissues composing the organ<sup>3</sup>. In perceiving, form receives and apprehends form. In order that it may perceive all the qualities which come within its range, the sense must be neutral or indifferent to all, must be a mean between the opposite extremes which it can perceive and be actually neither of them<sup>4</sup>. In the organ of sense the constituent elements are blended in a certain way, e.g. the finger has a certain temperature. But, as by the definition perceiving is qualitative change, this temperature must be capable of variation in the direction of either extreme or of any grade intermediate to the extremes, and the constituent elements of the organ of sense must be blended in such a way as to allow of this. This possibility of variation serves to explain the discriminating power which attaches both to sense as a whole and to the single special senses. Whatever is intermediate be-

<sup>1</sup> 424 a 11 sqq.

<sup>2</sup> 408 a 13 sqq., 410 a 1 sq.; *Metaph.* 993 a 15 sqq.

<sup>3</sup> 429 b 14—16, 426 b 3, 432 a 2 sq.

<sup>4</sup> 423 b 30—424 a 10, 426 a 27—b 7.

tween two extremes is differently related to the one and to the other. In Aristotelian language, any point in the middle of a line is the beginning of the line in relation to one extremity, the end of the line in relation to the other. The single sense sight discriminates two shades of colour. It is in a certain relation to the first when it perceives the first, it is in a different relation to the second when it perceives the second. The discrimination measures the difference between these two relations.

The parallel between sense as a whole and the separate special senses extends to the objects directly perceived. The objects which the special senses directly perceive are known by two marks: they cannot be perceived by another special sense and the appropriate special sense cannot be mistaken about them<sup>1</sup>. The objects not exclusively belonging to this or that special sense, but perceived by two or more special senses, are referred to sense as a whole, often called *sensus communis*. Such percepts are shape and magnitude, unity and number, motion, rest and time. They include what Democritus considered and Locke called the primary qualities of body. About this common function of sense as a whole there has been much needless mystification. The sentient soul is one, and all the more important and more intellectual of its functions belong to it in virtue of this unity. As one, it perceives the common sensibles; as one, it pronounces judgments of identity and difference between sensibles; as a single faculty attendant upon each and every special sense, it is self-conscious<sup>2</sup>. That to sense as a whole, the so-called *sensus communis*, should be assigned functions which in degree, if not in kind<sup>3</sup>, exceed those of the separate special senses, need not surprise us. For in sense we have a whole which is something more than the sum of its different parts. Analysis into its elements does not completely explain it, nor will the simple addition of these elements reproduce what was subjected to analysis. The operation of this single faculty is temporarily arrested in sleep, permanently in death. Lastly, to this faculty belong imagination, dreams and memory, which we are now to discuss.

<sup>1</sup> 418 a 7 sqq., 425 a 14 sqq., 428 b 18 sqq.

<sup>2</sup> 425 a 27, 426 b 20 sqq.; *De Somno* 2, 455 a 12 sqq.

<sup>3</sup> Some of these functions appear to be delegated by *sensus communis* to the special senses, if we interpret strictly the statements that each special sense discriminates the objects within its own province (426 b 10), and that it is by sight that we perceive that we see (425 b 12 sqq.). Probably, however, both statements require careful qualification, which the latter receives from *De Somno* 2, 455 a 12 sqq. Cf. Beare, *Greek Theories*, pp. 233, 2, 277.

Sensation is defined as the production of an effect in the sense-organ, a part of the body, by an external object. It is, then, a movement or impression affecting the body and, so far as we are conscious of it, the sensitive soul as well. Now this movement does not always vanish with the disappearance of the object which caused it<sup>1</sup>. Instances may be given of its persistence, as our inability at first to see in a darkened room if we have just left the sunlight; or what is known as the after-image (more correctly, the after-percept) when, if we close our eyes after looking at the sun, we see a succession of images of it in different colours<sup>2</sup>. It is by facts like these that Aristotle explains imagination. He defines it as a motion generated by actual perception, a motion distinct from, yet similar to, the motion which constituted the original sensation<sup>3</sup>, or, as Hobbes translates, "All fancies are motions within us, reliques of those made in the sense." In order to learn how wide is the range of the imaginative faculty we must turn to the tracts on *Sleep* and *Memory*. Sense itself is often mistaken in regard to the common sensibles and the things to which sensible qualities belong, for example, as to what the coloured or sonorous body is and where it is<sup>4</sup>: and these errors of sense are shared in and increased by imagination, especially when the sensible object is perceived from a distance. Illusion in general is due to the difference between imagination and judgment and between the standards they employ<sup>5</sup>. It may sometimes be corrected by one sense coming to the aid of another, as when the object perceived as double by crossed fingers is seen to be single<sup>6</sup>. The illusion that objects seem to move past us, when we in fact are travelling past them, implies that a movement is set up in the eye of the same kind as would occur if we were stationary and the objects themselves were in motion. In fact, the bodily movement induces a picture of the very object which might have been its cause. It is to the imaginative faculty that dreams must be ascribed<sup>7</sup>. Sleep is the arrest of the sensitive faculty as a whole or *sensus communis*, by which when awake we are conscious that we are awake and have sensations<sup>8</sup>. Plants, having no sensation,

<sup>1</sup> Cf. 408 b 18, 425 b 24 sq., 429 a 4; *De Insomn.* 2, 459 a 24—28.

<sup>2</sup> *De Insomn.* 2, 459 b 5—20.

<sup>3</sup> 428 b 10—429 a 5.

<sup>4</sup> 418 a 15 sq., 428 b 20 sqq.

<sup>5</sup> *De Insomn.* 2, 460 b 16 sqq., 1, 458 b 9 sqq.

<sup>6</sup> *ib.* 2, 460 b 20—27.

<sup>7</sup> *De Insomn.* 1, 459 a 14—22.

<sup>8</sup> *De Somno* 1, 454 b 25—27, 2, 455 a 12—b 2.

do not sleep<sup>1</sup>. In order that sense, which is charged with motive as well as perceptive functions, may recover from fatigue, sleep is necessary<sup>2</sup>, and it is brought about ultimately by the process of nutrition<sup>3</sup>. An evaporation from the food in the stomach rises to the head<sup>4</sup>, is there cooled and descends, causing a feeling of drowsiness. The surface of the body is cooled and what heat there is in the system collects about the heart<sup>5</sup>. It is clear that dreaming is not a function proper to sense as a whole nor to any special sense, much less to understanding or opinion<sup>6</sup>. Yet the images seen in dreams have sensible qualities. It only remains to refer dreaming to the same faculty as illusions in our waking hours. The residual movements in the organs are no doubt present in the daytime, but at night, when the action of the special senses is suspended<sup>7</sup> and the environment is peaceful, the imagination is most active<sup>8</sup>. Then *ex hypothesi* these persistent effects reach and stimulate the central organ of sense. We are most liable to illusions when labouring under emotion or morbid states<sup>9</sup>, as, for example, when a patient in sickness mistakes figures on the wall for real animals<sup>10</sup> and even makes bodily movements to escape from them. In sleep, again, the judging faculty is weak<sup>11</sup>, owing to the increasing pressure of blood around the heart<sup>12</sup>. There are, of course, cases in which dreams are the result of semi-conscious sensations, half-heard sounds or half-seen lights<sup>13</sup>, which would have escaped attention in our waking hours: and reflections and ideas are often added to them<sup>14</sup>. But in itself dreaming is simply the result of the movement of our sensations during the period of sleep as such<sup>15</sup>. Dreams are movements which give rise to images within our sense-organs<sup>16</sup>.

The most important of all our images are those of memory. If imagining is consciously referred to an earlier perception of which the image is a copy, then we call it memory<sup>17</sup>. For memory there are two conditions, the affection now

Memory-  
image.

<sup>1</sup> *De Somno* 1, 454 b 27—455 a 3.

<sup>2</sup> *ib.* 3, 456 a 32 sqq.

<sup>3</sup> *ib.* 3, 457 a 33 sqq.; *De Insomn.* 3, 461 a 3 sqq.

<sup>4</sup> *De Insomn.* 1, 458 b 9—459 a 9.

<sup>5</sup> *ib.* 3, 461 a 14—b 30.

<sup>6</sup> *ib.* 2, 460 b 11 sqq.

<sup>7</sup> *ib.* 3, 461 b 11 sqq., 26 sq.

<sup>8</sup> *ib.* 1, 458 b 15 sqq., 3, 462 a 5—7.

<sup>9</sup> *ib.* 3, 462 a 8 sqq.

<sup>10</sup> *De Mem.* 1, 449 b 24 sq., 450 b 31—451 a 2, 15 φαντάσματα, ὡς εἰκόνας οὐ φάντασμα, ἔστι, where ἔστι, which is usually understood to mean "retention," may mean "reference."

<sup>11</sup> *ib.* 2, 455 b 13—22.

<sup>12</sup> *ib.* 3, 456 b 17 sqq.

<sup>13</sup> *ib.* 3, 461 a 4.

<sup>14</sup> *ib.* 2, 460 b 3 sqq.

<sup>15</sup> *ib.* 3, 461 b 5—7.

<sup>16</sup> *ib.* 3, 462 a 19 sqq.

<sup>17</sup> *ib.* 3, 462 a 29—31.



present, and the perception of time<sup>1</sup>; in other words, not only images, but images regarded as decayed copies of earlier impressions, and this involves the perception of time. By memory we see distance, not indeed in space, but in time<sup>2</sup>. As memory is not confined to man, but extends to some of the lower animals, these latter must be credited with the imaginative faculty and the perception of time<sup>3</sup>. Here are very promising beginnings of a comparative psychology, which Aristotle, though he desiderated it in his predecessors, did very little himself to supply. His denial of understanding to brutes was a prejudice which a little research would have been able to surmount. As a matter of fact, he not only holds absolutely that, though the lower animals remember, they have no reasoning power, but, further, that, if memory were a function of pure intelligence alone, even man himself could not remember, since intellectual acts cannot be remembered *per se*<sup>4</sup>. What, then, can be remembered? The instrument of memory is the image. Hence whatever can be presented as an image can be directly remembered, all that cannot be presented as an image can only be remembered indirectly by means of the images with which it is associated. But how can we know the past which is not present, if our only instrument is a present affection, the image which survives after the original impression is gone<sup>5</sup>? Let us revert to the formation of images. The fact that a present movement of sensation sets up a subsidiary movement of imagination may be expressed in a different way, if we employ the metaphor of an impression, by which perception has been so often illustrated<sup>6</sup>. The act of perceiving, as it were, stamps a particular impression upon the sense-organ, as a seal ring stamps an impression upon wax. This impression, which remains, is a potential image so long as it is latent, an actual image when we become conscious that it is still present. Is it, then, this image, the reproduced impression, and not that of which it is an image, which we remember? If so, it may be urged, remembrance is not of the past at all. At that rate we might just as well suppose that in actual sensation also we see and hear what is not present to sense; an objection which cuts at the very root of every representative theory of perception. The objection is met by pointing out that in a certain way it is true that actual perception has for its object what is not present<sup>7</sup>. We see a

<sup>1</sup> *De Mem.* I, 449 b 18—29, 450 b 11—20, 2, 451 a 20—31.

<sup>2</sup> *ib.* 2, 452 b 7 sqq.

<sup>4</sup> *ib.* I, 450 a 10—14.

<sup>6</sup> *ib.* I, 450 a 30 sqq.

<sup>3</sup> *ib.* I, 450 a 15—22.

<sup>5</sup> *ib.* I, 450 a 25 sqq., 450 b 11 sqq.

<sup>7</sup> *ib.* I, 450 b 20 sqq.

likeness of an absent person : the picture is present, the original is not. The picture, though numerically one and the same, may be regarded in two ways, either as a simple picture or, in relation to the original, as a likeness. Apply this to the memory-image. It, too, may be regarded in itself simply as an image before the mind, or in relation to something else of which it is a representation. If viewed in the latter aspect, it is a memorial or reminder of an earlier perception which it recalls. It is distinguished from other images by its reference to time past and by the fact that it is, what many images are not, a copy or representation. Memory may accordingly be defined not simply as a retention, but rather as a reference, of a mental presentation as a likeness to the original of which it is a likeness. All representations are likewise presentations. Images are before us in memory, in present sensation and in expectation, whether hope, fear, or desire, but we refer these images to the past, the present, and the future respectively<sup>1</sup>. In all three cases something is presented, and the only way of distinguishing them is the accompanying perception of time, one of the common sensibles. Confusion of memory with imagination is one case of hallucination : thus Antiphron of Oreus was a type of mental derangement when he mistook what he only fancied for a past experience<sup>2</sup>. So far, then, like imagining in general, memory is a function of *sensus communis*, and hence it is to the central organ of sense that we must refer this movement or impression or image, or whatever else we call the corporeal change in question.

The distinction between memory and reminiscence or recollection is never very clearly stated by Aristotle, but, if we attend to what he says about acquiring knowledge and reacquiring it, i.e. about learning for the first time and learning over again what we have forgotten (neither of which, of course, is to be identified with memory or recollection), it seems that the case may be put as follows<sup>3</sup>. When we retain what we learn, whether by sense or thought, we are said to remember. Recollection implies the recovery of what has temporarily been obscured without going through the process of re-learning, and this whether the recovery is due to voluntary effort or is involuntary. We can remember without recollecting, if the image has never been lost, but is latent or potentially existent in us. When we recollect by voluntary effort we are conscious that it is lost and seek to recover it. Here

<sup>1</sup> *De Mem.* I, 449 b 25—28.

<sup>2</sup> *ib.* I, 451 a 8 sqq.

<sup>3</sup> *ib.* 2, 451 a 20—b 10.

I cite at length the account given by Wallace, p. xcv: "Recollection may take place either intentionally or unintentionally: we may, that is to say, recall some event of past experience either accidentally as it were or by the help of a distinct effort to call it back to mind; but in either case it is regulated by certain laws which it is one of the great psychological merits of Aristotle to have tabulated for us. The laws which thus express the mode in which the mind attempts to recall its past impressions are what have commonly been designated since Aristotle's day, the Laws of the Association of Ideas. But to Aristotle, it must be added, the laws in question have little or none of the significance which they have acquired in the hands of modern inquirers. To him they are simply a statement of the manner in which we seek to regain some fragments of knowledge which have for the moment got outside our consciousness. Recollection in short being the recalling of our past impressions, it follows that the success of our efforts to recall them will depend to no inconsiderable extent on the degree to which we can recall the order in which other impressions stood to that of which we are in search. But our impressions follow one another in memory in an order similar to that in which the actual sensations succeeded one another. Recollection thus involves a study of the laws of sequence in the order of our ideas: and Aristotle analyses the method of recalling past impressions in the following manner. 'When engaged in recollection we seek to excite some of our previous movements, until we come to that which the movement or impression of which we are in search was wont to follow. And hence we seek to reach this preceding impression by starting in our thought from an object present to us or something else whether it be similar, contrary or contiguous to that of which we are in search; recollection taking place in this manner because the movements are in one case identical, in another case coincident and in the last case partly overlap<sup>1</sup>. Similarity, contrariety and contiguity are thus to Aristotle the three principles by which for purposes of recollection our ideas and impressions have to be guided. Our sensuous movements and impressions really follow one another in an order corresponding to that of external nature. Thus, the more order and arrangement there is in the elements of our experience—the better connected our ideas are—the more easily will they be remembered<sup>2</sup>. And again the greater number of times we have established a connection between our

<sup>1</sup> *De Mem.* 2, 451 b 16—22.

<sup>2</sup> *ib.* 2, 452 a 1—3.

ideas, the greater will be the ease with which we can recall them. Habit in short becomes a second nature: and the constant conjunction of two phenomena in outer experience will lead to their being so completely connected in the mind that the one will never show itself without the other<sup>1</sup>."

I have reserved to the last the highest employment of mental images in the service of the intellect. It is impossible to think without such an image before the mind<sup>2</sup>. When we are contemplating the object of thought, we must have an image before us. The past experience which we remember includes not only perceptions, but thoughts, and the reference of the image to *sensus communis* compels Aristotle to declare that nothing but what is sensible is remembered directly, *per se*, and that the whole of our thoughts, notions and conceptions are remembered indirectly, *per accidens*. Our thinking is conditioned by continuity, i.e. extension, and by time. Just as in proving a geometrical proposition we are aware that the size of the figure does not affect the proof, but we nevertheless draw the figure of a determinate size, so in thinking, even though the object is not quantitative, we think of it as a quantum, and, if it is quantitative but indefinite, we nevertheless think of it as of a definite size<sup>3</sup>. What affections of sense are to the sensitive faculty, such images are to the thinking soul<sup>4</sup>. The total loss of a sense cuts off the man from all the knowledge available through that sense<sup>5</sup>. Without the sensations in question he will not have the corresponding images, and without them he cannot have the thoughts and conceptions. Intellect itself does not think external things without the aid of sense-perception<sup>6</sup>. Further, the use of images in thinking implies their use in that process of deliberation in which the mind balances the present against the future, and after due calculation decides upon a course of action<sup>7</sup>. When reason is obscured by passion, images of sense themselves directly move to action, and such images control the movements of the lower animals generally<sup>8</sup>.

Intellect forms the subject of Book III., cc. 4—8. But the detailed treatment there by no means exhausts what  
Intellect. is said about it in the treatise. It will be convenient to collect here the more important of the scattered remarks

<sup>1</sup> *De Mem.* 2, 452 a 27—30.

<sup>2</sup> *De A.* 431 a 16 sq., 432 a 8—13; *De Mem.* 1, 449 b 31.

<sup>3</sup> *De Mem.* 1, 450 a 1—14.

<sup>4</sup> 431 a 14 sq.

<sup>5</sup> 432 a 7 sq.

<sup>6</sup> *De Sensu* 6, 445 b 16 sq.

<sup>7</sup> 431 b 2 sqq., 434 a 5 sqq.

<sup>8</sup> 429 a 4 sqq., 433 a 9 sqq., b 28—30, 415 a 11.

previously made on thinking, on intellect, or even on the soul, where the context suggests that Aristotle, like Plato, is using soul for that which thinks.

If to think is a species of imagining or not independent of imagining, even thinking could not exist apart from body. Anaxagoras made soul the moving cause when he said that intelligence set the universe in motion. But, whereas Democritus absolutely identified mind with soul and did not use the term mind to denote a faculty conversant with truth, Anaxagoras was less consistent. He often made mind the cause of goodness and order; elsewhere he identified it with soul, as when he attributed it to all animals, great and small, high and low. And yet, Aristotle adds, mind in the sense of intelligence is not so widely distributed as soul or vital principle. Anaxagoras took mind as his first principle and said it alone of all existing things is simple, unmixed, pure. He attributed to one and the same principle that it knows and that it causes motion. Mind, according to him, is impassive and has nothing in common with anything else<sup>1</sup>.

The criticism<sup>2</sup> of the *Timaeus* suggests that in Aristotle's opinion the mind in the universe is not a magnitude; it is one and continuous in the same sense as the process of thinking, which consists of a series of thoughts; the unity of these thoughts is a unity of succession, the unity of number, not that of a magnitude. Hence, mind not being continuous like a magnitude, there are two alternatives: either it has no parts, or it has parts and is continuous, but not like a magnitude. A magnitude is incapable of thinking; if mind can apprehend with any one of its parts, it need not revolve nor have magnitude; it has to think two kinds of objects, the one kind divisible, the other indivisible. Thinking, as we know it, has limits which determine it, viz. the end in view or the new truths that the thinker discovers. Both thinking and inference bear far more analogy to rest or pause than to motion. In thinking the thinker ought to realise happiness. Thinking is the essence of the mind. Many held that entanglement in the body was a hindrance to thought; a satisfactory theory ought to explain why the thinking soul is enclosed in the body and under what conditions of the body.

In criticising the doctrine of harmony, he asks, what part of the bodily compound combining with the rest, can we assume to be intellect<sup>3</sup>? In another connexion Aristotle says that intellect

<sup>1</sup> 403 a 8—10, 404 a 25—b 6, 405 a 13—19, b 19—21.

<sup>2</sup> 407 a 2—b 26.

<sup>3</sup> 408 a 12.

would seem to be a self-existing substance which comes into play in us and is in itself imperishable, in spite of senile decay. Thought and its exercise are enfeebled when something internal is destroyed, but the intellect in itself is impassive. Memory, love and hate are not affections of the intellect, which is something more divine and is impassive<sup>1</sup>. In criticising Empedocles, Aristotle remarks that it is impossible for soul, and still more impossible for intellect, to have anything superior to it and overruling it, to it belongs a natural priority and authority<sup>2</sup>. It is difficult to conjecture what part of the body intellect holds together or how it can hold together any part<sup>3</sup>. After soul has been defined, we are told that there is as yet no evidence to show whether intellect is, like some of the other faculties of soul, really inseparable and only logically separable, from the rest. It would seem to be a distinct species of soul and capable of separation, as the immortal from the perishable<sup>4</sup>. Sensation is of particulars, knowledge of universals, which are in a manner in the soul itself. Hence it is in our power to think whenever we please<sup>5</sup>. To think is not the same thing as to have sensation, though they were identified by the ancients, who believed both to be corporeal changes<sup>6</sup>. Nor is thinking the same as imagination or as belief<sup>7</sup>. Imagination leads to action in the lower animals because they have no intellect, and sometimes in man when intellect is obscured by passion, disease or sleep<sup>8</sup>.

What conclusions can be drawn from these scattered remarks? Apparently in one passage we have a choice of alternatives: either intellect is without parts (and therefore by the presuppositions of the Aristotelian system must be immaterial and an energy), or it is something continuous, which is, however, continuous only like a number or series, by sequence, and not by coherence, like a magnitude. A bodily organ, which has parts, would alone secure the continuity of coherence; and for such an organ there is, or so Aristotle believed, no evidence. With this agrees the tentative assumption that intellect is something impassive, independent and imperishable, since its decay in the individual is an accident and not its real essence.

The account of intellect in Book III., cc. 4—8, is condensed and imperfect and falls far short of the clearness which marks the exposition of sense-perception. Intellect is especially concerned with quiddities and universals. It employs no bodily organ, for of

<sup>1</sup> 408 b 18—29.<sup>4</sup> 413 b 24—27.<sup>7</sup> 427 b 14 sqq.<sup>2</sup> 410 b 12—15.<sup>5</sup> 417 b 22 sqq.<sup>8</sup> 429 a 4—8.<sup>3</sup> 411 b 18.<sup>6</sup> 427 a 19 sqq.

the functions of the nervous system Aristotle and his contemporaries had no idea. It contains a divine element, which is independent of the body and immortal. This summary tells us hardly any more than we have collected from the casual or polemical remarks in the previous part of the treatise. But Aristotle might fairly claim to have set before us his view both of (1) the difference between intellect and sense, and (2) the way in which thinking comes about: and this is all he promised at the outset<sup>1</sup>.

(1) There is an analogy between sense and intellect, there is also a difference. Both furnish knowledge, both pass judgments, both are intermittent, sometimes in act, sometimes not. When in activity both have an object, the transition from the dormant power to its actual exercise does not depend upon sense alone or upon thought alone, and, when the activity is over, the alteration thus undergone leaves intellect absolutely, and sense to a great degree, unaffected. Sensitivity in the abstract is a form which knows or apprehends sensible forms. Similarly intellect is a form which knows or apprehends intelligible forms<sup>2</sup>. Moreover, in both sensation and intellection alike at the moment of apprehension, there is identity between the form which apprehends and the form which is apprehended. Again, sense-perception is always true of its own appropriate object, and similarly thinking is always true in respect of quiddities<sup>3</sup>. On the other hand, the external object which stimulates the sense-faculty to activity is an individual, a particular, and it is external to the percipient; whereas the universals, the forms which we think, are present in the understanding, at any rate, of the mature man. Sensation cannot dispense with a bodily organ, a part of the body appropriated to its special functions. For intellect no such organ can be discovered. Yet, when a sense-organ is wanting, the action of intellect is impeded, for all knowledge through that sense is cut off<sup>4</sup>. Moreover, excess in the sensible fatigues or destroys the organ of sense, but the activity of thinking cannot be thus impaired. Again, intellect is the higher faculty of the two and implies the lower; the lower does not imply the higher. For actual thinking the indispensable condition is the presence of a mental image, for, as we saw above, we think of nothing apart from continuity. Even when the object conceived is not itself a quantum, we nevertheless think of it as such. And we never think of objects without thinking them in time<sup>5</sup>.

<sup>1</sup> 429 a 12 sq.

<sup>2</sup> 431 b 20—432 a 3.

<sup>3</sup> 430 b 29—31, 433 a 26.

<sup>4</sup> 432 a 7 sq.

<sup>5</sup> *De Mem.* I, 450 a 7—9.

(2) The process of thinking an object is explained in much the same way as the process of perceiving an object by sense. In spite of the differences stated above, both, as acts of apprehending, are assimilated to the process of reciprocal action between physical bodies. Apprehension is reception of form. If the mind knows objects by receiving them, since nothing receives what it already has, it must be assumed to be at first without them; and further, so long as it remains capable of thinking, the same condition must be fulfilled for every fresh act. Hence intellect must be impassive, suffering in no way by the change from power to act and, since it thinks all things or, in other words, is capable of receiving all forms, it must in itself be devoid of any form, though at the same time it "provides room for forms." It may be called, then, a mere aptitude or capacity to think. Until it actually thinks them, it is none of its objects, but becomes each object in turn when it thinks that object. In physical action there is a transference of essence or form: in combustion the form of heat is transferred from fire actually alight to combustible fuel. When a white object is perceived, the form of whiteness is transferred from the object to the eye and, as there is but one such form, is the same in the percipient sense as in the external object. And so when we think a stone, a horse, a triangle, the form or essence in our mind, the object of thought, is identically one with the form or essence outside *in rerum natura*. As a contribution to the theory of knowledge, this explanation is adequate. External things affect our sense. By sense we apprehend hot and cold and whatever other sensible qualities are accidents of flesh<sup>1</sup>. We think each sensible quality, generalising and abstracting the universals, of which sense by itself informs us only *per accidens*. The substance in which the attributes inhere, which is said to be indirectly perceived by sense, is directly judged and known by thought.

So far intellect has been treated as one. It is possible to apply to this unity the analysis which resolves particular things. When nature generates or art produces a concrete particular, three conditions are fulfilled. There is the efficient agent transmitting form, there is the passive recipient upon which form is impressed, and there is, lastly, the result of the process, the new particular into which matter impressed by form has been made. To manufacture a brazen sphere, we need the craftsman with the design in his mind and brass to receive that design. The form of a sphere is



impressed upon the brass and a new particular is made, precisely as the form of humanity is transmitted from father to son<sup>1</sup>. Our knowledge and actual thinking answer to the manufactured product, they are generated in the receptive intellect by something which must be assumed in intellect itself to correspond to the efficient cause. That which on one view is the reception of essence, is on another the spontaneous transition from potency to act. This is true of sense. Sense becomes like its object, in quality identical therewith. But it is just as true to say that sense has risen from the lower stage of potency to the higher stage of act and realised itself in full activity. So, again, thinking is reception of the form or essence, but it is just as true to say that intellect has risen from the lower stage of potency to the higher stage of act and realised itself in full activity. Perception, it is true, cannot be explained without assuming interference from without. The occasion which supplies the stimulus to the transition must be something given. With thought it is different. The occasion, the stimulus, are not external, but internal. I may say, if I like, that my potential or passive intellect has been acted upon and educed into actuality : but what brought this about? A mental agent, the active intellect, has called forth this activity and produced the thought. In my individual experience the power to think precedes actual thinking, but the transition cannot be explained except by assuming the prior existence of the efficient cause which brought it about. This point once reached and the unity of intellect being resolved into agent and patient, it follows that the agent which we postulate must have the same attributes as the patient, of which we have experience. It must be separable, impassive and unmixed, because its essence is activity, as the essence of the other factor is potentiality. Could it be actually separated and exist independently, it would be eternal. But this eternity is not communicated to the other factor of intellect, or to the intellect as a whole. Is such a hypothesis necessary? Can the potential intellect be affected by external things? So far as these things have matter in them, they are objects of thought only potentially. The intelligible forms are implicit in the sensible forms, and intellect *ex hypothesi* has no special bodily organ. But so far as knowable things are pure forms, no such expedient is required. The question, then, why an active intellect is introduced, may be thus answered. It is in order to provide a cause of that transition from potency to act which takes place whenever we actually think.

<sup>1</sup> *Metaph.* 1032 a 12—1033 b 26.

The difficulty in understanding what Aristotle did or did not intend by this analysis of the intellect, or rather this distinction of the intellect which makes from the intellect which becomes, is notorious. The scanty comments of Theophrastus<sup>1</sup> develop various lines of acute criticism, which in my judgment are not incompatible with an acceptance of the doctrine. So much is clear, that Theophrastus considered intellect in both its forms, as making and becoming, to be our human intellect, which is connatural and in us from birth to death, though its origin is elsewhere. In face of the difficulties which he is at pains to develop he seems content to regard the passive intellect dependent upon the body and the human intellect which results from the union of the passive with the active as in a sense distinct, yet as in another sense one nature, in so far as the two are related to one another as matter and form are in the unitary thing. That the active intellect exists *per se* in man independent of the passive is nowhere stated or implied either by Aristotle or Theophrastus. From a casual criticism by Themistius<sup>2</sup> it appears that certain of his predecessors had identified the active intellect with the premisses from which all our knowledge is derived and with the knowledge itself which we gradually acquire. Alexander of Aphrodisias<sup>3</sup>, who endeavoured to preserve faithfully the teaching of Aristotle and to present it as consistent, distinguished a material intellect and an intellect *in habitu*, which the former becomes by actual thinking and reception of the intelligible form. The material intellect is the mere aptitude for thinking: this is a power or faculty of the individual human soul, the form of the body. Lastly, there is the active intellect which is not a faculty or part of the human soul, though it is in it from birth to death whenever we actually think: not only when we think it or any of the immaterial forms with which it is identical, but also when we think forms in matter, for it is only through the agency of the active intellect that actual thinking is possible. Being wholly immaterial, energy devoid of all matter and potentiality, it always is, even when it is not thought by men; it is an eternal, imperishable, self-existent substance. There can be but one such substance: it must consequently be identified with the deity, the first cause of motion in the universe, whose nature and essence is activity, the energy of

<sup>1</sup> See Appendix, p. 589 sqq.

<sup>2</sup> 102, 32 sqq. II., 189, 17 sqq. Sp. This view follows from an extremely one-sided interpretation of the statement that *νοῦς* is *τὸ ἀσυνεχές*.

<sup>3</sup> *De An.* 80, 16—92, 11, *Mantissa* 106, 19—113, 24.

thinking. In individual men it supervenes as something coming in from outside. It finds in the capacity of thinking which does belong to the human soul an instrument ready for its use, upon which it can work and produce actual thinking. As to the reason why men think not always, Alexander has no better explanation to offer than a suggestion of his teacher<sup>1</sup>, that the craftsman is still a craftsman even when he has laid aside his tools. The eclectic Themistius<sup>2</sup> refused to identify the active intellect with the deity outside man. He appeals to two expressions of the master (1) "that these differences must be present in the soul," (2) "this alone is immortal and eternal," which he thinks Alexander's interpretation forces out of their natural meaning. As to (1) Alexander has his own explanation to offer, according to which the active intellect, and therefore the deity, is in our mind whenever we think: but there is some force in the contention that Aristotle would never have described the deity as "alone" immortal and eternal. However, the point in which Themistius agrees with Alexander is more important than the points in which they differ. He fully admits that the active intellect is one and the same in all men, it is distributed among different individuals as light is divided into single rays. Of the other commentators, the Neo-Platonist Simplicius<sup>3</sup> distorts Aristotle's account in order, as far as possible, to adapt it to his own philosophical presuppositions. According to him, the rational human soul is one immortal substance. It has three states: in the first it remains in itself; this is the active intellect. In the second it enters the body; it then knows nothing, but is the pure potentiality of thought. Intellect of the first stage acts upon intellect of the second stage, and the result is the third stage, when intellect is *in habitu* and acquires knowledge. The passive intellect is mortal, because it ceases to be passive and is absorbed in the higher or active intellect. It is not worth while to pursue the course of speculation further among Arabian philosophers and the schoolmen, in both of whom the theological bias is unmistakable. Avicenna<sup>4</sup> was an original thinker who exerted a

<sup>1</sup> *Μαντίσσα* 110, 4 ἡκουσα δὲ περὶ νοῦ τοῦ θύραθεν παρὰ Ἀριστοτέλους, ἃ διεωσάμην κτέ. If this is not a pleasant fiction, which would be more incongruous in Alexander than the one joke in Thucydides (ὁ λέων ἐγέλασε), we must acquiesce in Zeller's conjecture Ἀριστοκλέους, *Phil. der Gr.* IV.<sup>3</sup>, p. 785.

<sup>2</sup> 98, 12—109, 3 H, 181, 3—200, 25 Sp.

<sup>3</sup> 217, 23 sqq., 243, 10—245, 2, 246, 16—248, 17.

<sup>4</sup> I have not studied the mediaeval philosophers at first hand. For my acquaintance with them I am indebted mainly to Zabarella, Brentano, *Psychologie des Aristoteles*, pp. 8 sqq., who gives copious extracts, Ueberweg, *Geschichte der Philosophie*, Siebeck, *Geschichte der Psychologie*.

great influence on his successors; but neither his distinction of universals, *ante res, in rebus, post res*, nor his doctrine that these universals are at once substantial forms in things outside us and intelligible forms to the mind which thinks them by abstraction has any direct Aristotelian authority, and when he makes both forms alike emanate from the active intellect and ultimately from God, this doctrine becomes nearly akin to that of the Neo-Platonists. Averroes and Aquinas, though both professing to interpret Aristotle, modify his doctrines to suit their own preconceptions. According to the former, neither passive intellect nor active intellect is part of the human soul as defined in the definition. In scholastic language each is *forma assistens, superveniens* and not *forma dans esse homini*. Each is immortal and each is one and the same in all men. According to Aquinas, active intellect as well as passive intellect is a faculty of the rational human soul, which was created by the will of God and is yet immortal, having the power as form to provide a vehicle for itself after it is separated from its present body. Regarded as interpretations of Aristotle's doctrine, these two conflicting views, which divided the allegiance of the later schoolmen, cannot both be right, but may both be wrong. Aristotle himself was free from the preconceptions of his two commentators; he was not a Moslem mystic nor a Christian theologian.

These successive attempts to fill in the meagre outline presented by the text of *De Anima* proceed in two directions. Either they make the two intellects two faculties of the human soul, or they seek to identify one, if not both, of them, with an intelligence outside man. Alexander, Averroes, and in modern times, Ravaisson and Renan, have gone to the greatest lengths in the latter direction. But, if the act of thinking is independent of, or alien to, man's nature, how can the aptitude for thinking be any longer a part of it? Averroes no doubt is consistent: he declares the passive intellect also to be an immaterial substance and no part of the soul which is the form of the human body. But, in order to maintain this, he is obliged to do violence to the language of the treatise. In particular, his *virtus cogitativa*, with which, according to him, the definition of soul endows man, has to be divorced from intellect proper and reduced nearly to the level of *sensus communis* or imagination. Even then he is unable to explain why, after the definition of soul has been obtained, it should have been left an open question whether intellect properly so called is or is not a part of the soul<sup>1</sup>, or why it should be designated as a "part" when

<sup>1</sup> 413 b 13—26, 415 a 11 sq.

at last it comes up for special treatment<sup>1</sup>. But in fact all views in which human intellect or a part of it is identified with the activity of divine intellect are met by the same insoluble difficulty: what is to be made of the intellect which becomes all things? Modern enquirers are hopelessly divided as to what the passive intellect is. Trendelenburg answers "all the lower faculties in contradistinction to the active intellect<sup>2</sup>," Zeller "the sum of those faculties of representation which go beyond imagination and sensible perception and yet fall short of that higher Thought, which has found peace in perfect unity with its object<sup>3</sup>," Ravaisson "the universal potentiality in the world of ideas<sup>4</sup>," Brentano "imagination<sup>5</sup>," Hertling "the cognitive faculty of the sensitive part<sup>6</sup>," and Hammond, if I understand him rightly, "the life of sensation as a potentially rational mass," "the sum of the deliverances of sense-perception and their re-wrought form in memory and phantasy, regarded as potentiality<sup>7</sup>." The last two would seem almost to identify its functions with those of *sensus communis* as a judging faculty. Now these various answers do not accord with the description in *De Anima* of the process and act of thinking, whether as apprehension of the intelligible object or as the judgment which makes two concepts one; they do not fit either the conception of intellect *in habitu*, the process by which knowledge is acquired, or the sharp distinction drawn between a thought and a mental image. Thinking is not the same as receiving or retaining or remembering or judging the percepts of sense, which are all individual and lack the universality required. Abstraction alone renders thought possible, and abstraction cannot be restricted to the active intellect. Again, all the operations of thought imply a single judging power. This position, which Aristotle has maintained for sense, he would certainly maintain as strongly for thought. When he controverts the Protagorean maxim and points out that it must lead to universal relativity, he contends that there is such a thing as absolute existence, a something determinate in itself apart from all relations, for presentation of an object implies a subject to whom the object is presented<sup>8</sup>. The

<sup>1</sup> 429 a 10.

<sup>2</sup> p. 405: "Omnes illas, quae praecedunt, facultates, in unum quasi nodum collectas, quatenus ad res cogitandas postulatur, νοῦν παθητικὸν dictas esse iudicamus."

<sup>3</sup> *Aristotle*, II. p. 102 Eng. Tr.

<sup>4</sup> *Essai sur la Métaphysique d'Aristote*, I., pp. 586 sqq.: cf. II., pp. 17, 19.

<sup>5</sup> *Psychologie*, p. 208 sq.

<sup>6</sup> *Materie u. Form*, p. 174.

<sup>7</sup> pp. lxxxiii sq.

<sup>8</sup> *Metaph.* 1011 a 17—20.

object of thought, then, implies a thinking subject. If these modern interpreters were right in equating the intellect which becomes with one or other of the lower faculties or with the sum of them, then the functions of these faculties would be identical with the function of thought, so far as the intellect becomes all things. But the lower faculties, sense and imagination, never succeed in obtaining an object which is a true universal.

If, however, we vindicate the right to think for the intellect which becomes all objects and is said to be *in habitu* when it acquires knowledge, it would seem that this can only be done at the expense of the intellect which makes all objects. The functions of the latter are then reduced within the narrowest compass. According to some, it does not really think at all, it does little more than "illuminate" the mental image, thus facilitating the abstraction of the universal form. But Aristotle speaks of its perpetual activity, he says there is no intermission in its thought<sup>1</sup>. Yet it is not unreasonable to suppose that determinations so unlike as "pure potentiality" and "incessant activity" refer to the same thing under two different aspects. Each describes it abstractly, and, to know the whole, the two determinations must be combined. If there is within us a thought which is continuous and always in activity, at any rate experience does not tell us so<sup>2</sup>, it can only be a conclusion of reason. How, then, did Aristotle reconcile this conclusion with the facts? Apparently he made this thinking latent. The intellect always thinks, but we do not remember. This, then, is what the attribute "potential" means as applied to the intellect<sup>3</sup>; and this agrees with the conception of the powers or faculties of the soul in general, which are permanent possessions, all dormant and unconscious, until roused to activity in consciousness. Here we may recall a previous use of the antithesis between potential and actual in Aristotle's account of imagination. The images or survivals of sensation are not always present to consciousness, yet Aristotle treats them as still in existence; they continue, he says, in the organs of sense, they are potential images while they are dormant, actual images when they are revived and reappear, as we should say, in consciousness<sup>4</sup>. It may be worth while to hazard the conjecture that the intellect which does not consciously think is

<sup>1</sup> So, at least, I understand 430 a 22.

<sup>2</sup> Cf. *Anal. Post.* II. 19, 99 b 25 πρότερον... αὐτὸ ἐξεῖς... ἐνόησαι λεληθασιν.

<sup>3</sup> Aristotle conceives νοητὰ to be directly presented, much as modern psychologists conceive perceptual objects to be directly presented and to form a perceptual continuum. Cf. *Metaph.* 1087 a 10—25.

<sup>4</sup> Cf. 425 b 24 sq., *De Insomn.* 2, 460 b 2 sq., 3, 461 b 11—17. See also p. liii.

similarly described as potential intellect, and yet all the time its thoughts are there, though its incessant activity is subconscious. It will be seen that, though I do not entirely agree with Wallace, I nevertheless recognise a certain element of truth in his solution of the difficulty. He thus conceives the relation of the two intellects: "the creative reason is the faculty which constantly interprets and as it were keeps up an intelligible world for experience to operate upon, while the receptive reason is the intellect applying itself in all the various processes which fill our minds with the materials of knowledge<sup>1</sup>." And again: "the two it must be remembered are not 'two reasons': they are merely different *modes* of viewing the work of reason<sup>2</sup>."

In the account of sense and thought, with which we have been hitherto mainly occupied, the cognitive element is very prominent. It is natural to infer that our philosopher regards man chiefly on the intellectual side, as a spectator of the universe, a being who contemplates. And this impression would seem to be confirmed when we learn from the *Ethics* wherein man's chief good consists. But no Greek could overlook the other side of human nature. The conclusions of the *Ethics* must be taken in conjunction with the wider generalisations of the *Politics*; and, if the self or ego is identical with intellect, intellect is practical as well as theoretic. The true is in the same class with the good; good, real or apparent, is the goal of all striving and effort. With his teleological bias, Aristotle would have endorsed the words of a modern psychologist<sup>3</sup>: "Looking broadly at the progress of life, as it ascends through the animal kingdom and onwards through the history of man, it seems safe to say that knowledge is always a means to ends, is never an end by itself—till at length it becomes interesting and satisfying in itself. Psychologically, then, the sole function of perception and intellection is to guide action and

<sup>1</sup> p. xcvi.

<sup>2</sup> p. cxv. Wallace was not alone in holding that Aristotle never intended to affirm two distinct intellects, but only to distinguish two phases or aspects of the one intellect. A similar view is maintained on very different grounds by Bullinger, *Nus-Lehre*, pp. 34 sqq., and by Mr F. Granger, *Class. Rev.* vi. pp. 298—301, who states it as follows: "the reason is passive and affected by corporeal conditions, so far as it uses the *φαντάσματα*, grasping the *εἶδη* from among them. It is purely active only when it concerns itself with *νοητά*, among which itself is included." Cf. Brandis, *Gesch. der Entw.* i. p. 518, *Handbuch*, ii. b, 1178. Kampe and Grote came to the conclusion that intellect, though separable from the human body, is not separable from body in general. They affirm that it has for its necessary substratum the ether, the most divine of the elements: Kampe, *Erkenntnistheorie*, pp. 12—49, Grote, *Aristotle*, ii. p. 220 sqq. See, however, Zeller, *Aristotle*, ii. p. 95, n. 2, Eng. Tr.

<sup>3</sup> Professor James Ward, *Enc. Brit.*, Article on Psychology, p. 56.

subserve volition—more generally, to promote self-conservation and betterment.” In *De Anima*, a professedly biological treatise, with the soul in all living things for its subject, this part of the enquiry is not pushed far<sup>1</sup>. The main outlines are given, but we must look elsewhere, and particularly to the *Ethics*, for further details. The problem is presented in a very simple fashion. In the animal world motion, in the sense of locomotion, is an all-pervading fact, and but slight observation suffices to show that this motion is not random or irregular, but is directed to an end. To what power or faculty, then, is it to be ascribed? The nutritive faculty, Aristotle thinks, sufficiently accounts for movements of growth and decay, whether in animals or plants, but not for the progressive movements of animals, movements prompted by want and directed to an end. If the nutritive faculty were sufficient to produce such movements, Aristotle adds with unconscious irony, plants would move spontaneously and would have organs adapted for the purpose. Nor can these movements be explained as due to the sensitive faculty, since there are whole genera of perfectly-developed animals of a low type which do not move from place to place. But if locomotion were implied in sensation, they, too, would have organs adapted for locomotion. Is intellect, then, the cause of which we are in search, as Plato thought? No. Intellect is either theoretical or practical. The former issues no command as to what we should avoid or pursue and, although the latter does issue such commands, they are not necessarily obeyed. The analogy of the arts, too, shows that, in order to produce action, something else is required beyond the mere knowledge of what is to be pursued or avoided. Shall we say, then, that there are two motives to action, (1) desire and (2) the intellect which calculates means to ends, the place of which latter in animals devoid of reason is taken by imagination? If so, how are the two connected? Desire is always of an end, and this end is the starting point for the calculations of the practical intellect. Intellect and desire, then, are connected by the ultimate unmoved movent, the end of action. It is this which stirs desire, while intellect, assuming that the end can be realised, calculates the steps towards its attainment. Thus the physician whose aim is to cure an ague assumes this to be done, just as if he were trying to solve a geometrical problem, and then reasons backwards from the patient's recovery to the normal temperature which this implies, from the normal temperature to the production of heat or cold, and from that to some remedy at

<sup>1</sup> See Book III. cc. 9—11.



his command; and thereupon, having reached the end of his calculations, he proceeds to act. Hence the statement that there are two motives to action calls for qualification. Had there been two, they would have had some common character, but as a matter of fact intellect is never a motive apart from desire. On the other hand, desire does sometimes move to action in spite of reason. Desire is thus found in all forms of mental life. In reason it is rational wish, but there are also irrational desires, anger and appetite, or mere desire of pleasure. In fact, an appetitive faculty must be assumed in which Plato's anger and appetite are both included, and Aristotle says quite fairly that the soul may be divided into many faculties, any two of which are more distinct than these two of Plato. Wherever in the animal world there is sense-perception, there is also the feeling of pleasure and pain. The pleasurable prompts desire, the painful aversion, and the survival of sense-impressions, which is imagination in its lowest form, can prompt to desire no less than the present object in the moment of perception. For the intellect images take the place of present sensation. A conflict of desires may arise, for though reason will judge correctly, anger or appetite may be blinded. They may take apparent good for real good, or they may interpret good as the pleasure of the moment. Every desire, whether rational or irrational, implies a corresponding image of the object desired. Hence a distinction between images, according as they proceed wholly from sense (and this class of images alone belongs to irrational animals) or proceed from reason, calculation; in fact, deliberation. This latter class of images is peculiar to man. Yet even in man in the abnormal state of incontinence the irrational desire gets the better of reason and controls action. In order to express the antecedents of action, whether of the normal or abnormal kind, Aristotle resorted to the analogy of the syllogism. From a universal major premiss and a particular minor a conclusion is inferred. For example, all men should take exercise, Callias is a man, *ergo* Callias should take exercise. His taking exercise is regarded as an inference from the premisses. It resembles the conclusion of a syllogism just in so far as a particular case is brought under a general rule. But this way of looking at the matter by no means ensures rational action or justifies the assumption that the intellect always calculates correctly, for incontinence has a syllogism of its own. For example, all sweet things are to be tasted, this thing before me is sweet: then, if you have the power and are not hindered, you cannot but at once put the conclusion

(this is to be tasted) into practice. In this way the triumph of the irrational impulse and the sacrifice of the permanent good to the pleasure of the moment may equally be considered to bring a particular case under a general rule. In other words, although reason has a natural right and ought to prevail, experience shows that it is not always effective, even in beings endowed with reason, who look before and after. When impulsive action has been distinguished from deliberative and we are dealing with the latter only, since purpose is desire following upon deliberation, if the purpose is to be all it should be, both the calculation or reasoning must be true and the desire right, and the very same things must be assented to by the reason and pursued by the desire<sup>1</sup>.

In the foregoing sketch I have been content to let Aristotle speak for himself, piecing together various utterances and putting the best construction I could on what is obscure and enigmatical in them, but refraining as a rule from criticism. Obviously he studied psychology as a philosopher and was chiefly interested in it as it bore upon philosophical problems. He exalted the cognitive element, while his treatment of the emotions and the will is wholly inadequate, even if the *Ethics* and the *Rhetoric* be called in to redress the balance. It is now contended that the science of psychology, which has made vast strides since these humble beginnings, must be based exclusively upon individual experience and be made independent of physiology. Whatever can be set down to the credit of Aristotle as a psychologist rests upon the opposite assumptions. He approached his subject from the psychophysical standpoint, as it is called; he had his own representative theory of perception, his own account of the gradual ascent from sense, through memory, to science and reason. He could not escape the errors and confusion incident to such assumptions, if after all they are not ultimately valid. Thus we are brought face to face with grave metaphysical problems. But this is not the place to examine Aristotle's system as a whole, and without such an examination it is impossible to do justice either to his theory of knowledge or to the treatise on the soul.

<sup>1</sup> *Eth. Nic.* 1139a 22--26.

## INTRODUCTION. II.

### THE TEXT.

The text of *De Anima* rests mainly on the authority of a single good manuscript, cod. Parisiensis 1853, better known by the symbol E, given it by Bekker. Trendelenburg<sup>2</sup>, p. xvi, describes it thus; saeculi decimi, membranaceus, eleganter et perspicue scriptus, vocibus non seiunctis sed inter se ligatis. Torstrik adds, p. viii: In eo igitur codice qui sunt de Animâ libri duabus manibus scripti sunt, antiquissimis, elegantissimis, simillimis, sed duabus. Book I., Book III. and the fragments of a recension or paraphrase of Book II., different from the vulgate (see pp. 164 sqq. *infra*), are in the same hand as the *Physics*, which cod. E also contains, and have 38 lines to the page. Book II. in a complete form and in practically the same recension as all other manuscripts present is the work of another hand and has 48 lines to the page. Cod. E has been scrutinised by Bekker, Trendelenburg, Bussemaker, Pansch, Torstrik, Biehl, Stapfer and Rodier. For further information respecting its peculiarities I refer my readers to Trend.<sup>1</sup> pp. viii, xxiii—xliii, Trend.<sup>2</sup> pp. vi, xiv—xviii, Torstrik pp. ii, viii—xv, Stapfer, *Studia in Aristotelis de anima libros collata*, especially pp. 4—13. In Book III. cod. E is mutilated, one leaf, which should have come between fol. 200 and fol. 201, is missing: it doubtless contained upon its 76 lines the text from 430 a 24 *μνημονεύομεν* to 431 b 16 *ἐκείνα*, or 84 of Bekker's lines. Further, the last leaf is also wanting, which should have contained from 434 a 31, the *-θὲν* of *μηθέν*, to the end, 435 b 25, or about 86 of Bekker's lines. The loss of these two leaves is serious, but is in some measure compensated by the fact that for the whole of Book III. we have cod. L, Vaticanus 253, presenting a text which agrees more closely with that of cod. E than with that of the other extant manuscripts. Cod. L, which contains only the third book of *De Anima*, is described by Trend.<sup>2</sup>, p. ix, as follows: codex chartaceus, foliis quaternis minoribus, satis recens, cuius librarius interdum scripturae compendia male intellexit. Hauthalius codicem bombycinum perspicue et diligenter

scriptum saeculi XIV esse litteris nobis significavit. A lectionum praestantia (saepius enim cum vetustissimo codice (E) consentit) antiquior quam recentior esse videatur.

Besides codd. E and L Bekker collated six other codices of later date, which he indicated by the symbols S T U V W X. To these in what follows I shall give the name of the S-X group. The six have, so far as I know, never been scrutinised or collated by anyone since Bekker. Torstrik consulted the manuscript materials (preserved in the Royal Library of Berlin), which Bekker collected for his edition, and was thus enabled from Bekker's own evidence to correct a few errors in Bekker's report of the readings of cod. S, as of cod. E (Torstrik, p. vii sq.: cf. *Philologus* XII. 3, pp. 494—530, XIII. 1, pp. 204—206). The conclusion which Stapfer<sup>1</sup> reached after careful study was that without a fresh collation of these six inferior codices the question of their mutual relationship and pedigree could not be definitely settled, but that the result of such a fresh collation would not be worth the trouble expended upon it (*Kritische Studien zu Aristoteles' Schrift von der Seele*, pp. 33 sq.). What is certain is that, while codd. E L go back to one common archetype, those belonging to the S-X group go back to another and a different common archetype. This result is established as follows:

(A) Cod. E has two lacunae, each, I conjecture, a line of its archetype, which the other six codices supply. These lacunae are 405 b 25 sq. *ἄλλο, καὶ τὴν ψυχὴν ὁμοίως ἐν τι τούτων* and 425 b 30 sq. *τότε ἢ κατ' ἐνέργειαν ἀκοή ἅμα γίνεται καὶ ὁ*. Further, cod. E in 44 several places omits a single particle, an article, adjective, noun or verb, or even two (and once three) words, which are supplied by the group S-X. On the other hand, there are 22 cases where cod. E has a slightly fuller text than the S-X group, the latter having omitted most frequently a particle, sometimes a noun or verb, and twice a couple of words (*ὁμοίως δὲ* 426 a 31, *ὁ νοῦς* 429 b 13).

(B) When we come to classify the readings in which cod. E differs<sup>2</sup> from the S-X group, we sometimes find (1) a different word or (2) a different inflexion of the same word. The following are instances. In all cases the reading put first is the reading of cod. E, that put second is the reading of the S-X group, while

<sup>1</sup> In all that follows upon the relationship of the manuscripts to each other I am largely indebted to Stapfer's two pamphlets.

<sup>2</sup> I mean the first hand of cod. E. See below as to the corrections.

the words within brackets denote variants in some of the six manuscripts of the S-X group.

(1) 402 a 26 *μόνον* : *μᾶλλον*, 403 a 19 *σημεῖον* : *μηνύει*, 403 b 12 *ὅσα* : *ὀπόσα*, 406 a 10 *δισσῶς* : *διχῶς*, 407 a 19 *ἥ* : *καί*, 409 b 9 *μικράς* : *σμικράς*, 409 b 11 *ταύτας* : *αὐτάς*, 410 a 7 *ἐνεῖναι* : *εἶναι*, 410 a 25 *τε* : *τι*, 410 b 18 *πάσης* : *ἀπάσης*, 411 a 30 *αὔξη* : *αὔξεις*, 426 b 2 *λιπαρά* : *πικρά*, 427 b 11 *ταυτό* : *τὸ αὐτό*, 428 a 14 *ἐνεργῶς* : *ἐναργῶς*, 428 b 3 *ποδῖος* : *ποδιαῖος*, 428 b 15 *αὐτῆς* : *αυτη*, 428 b 16 *κατὰ ταύτην* : *κατ' αὐτήν*, 429 a 9 *διότι* : *διὰ τί*, 429 a 14 *ὅτι* : *τι*<sup>1</sup>, 432 b 9 *αὔξην* E (Trendl.), *αὔξιν* E (Bek.) : *αὔξησιν*, 432 b 27 *ἐκείνων* : *κινῶν*, 433 a 18 *ὀρεκτόν* : *ὀρεκτικόν*, 434 a 3 *λύπην καὶ ἡδονὴν ἔχουσα* : *λύπη καὶ ἡδονὴ ἐνοῦσα*, 434 a 14 *ἐνῇ* : *γέννηται*.

(2) 402 b 4 *μόνον* : *μόνης*, 402 b 6 *ἐκάστην* : *ἑκαστον* (*ἕτερον*), 402 b 8 *κατηγορεῖται*<sup>2</sup> : *κατηγοροῦτο*, 403 a 29 *ὀρίσαιντο* : *ὀρίσαιτο*, 405 a 8 *ἀποφαινόμενος* : *ἀποφηνάμενος*, 406 a 18 *ὑπάρχει* : *ὑπάρξει*, 406 b 23 *ταῦτα ταῦτά* : *τοῦτ' αὐτό* (*ποτε*), 407 a 11 *μορίῳ* : *τῶν μορίων*, 407 a 26 *ἡ μὲν οὖν ἀπόδειξις* : *αἱ δ' ἀποδείξεις*, 408 b 34 *ἴδια* : *ιδία*, 409 b 7 *τοῖς σώμασι* : *τῷ σώματι*, 410 b 6 *γνωρίζει* : *γνωριεῖ*, 411 b 12 *ἡ ψυχὴ* : *τὴν ψυχὴν*, 424 b 27 *ἐκλιπεῖν* : *ἐκλείπειν*, 425 b 1 *χολὴν ὅτι* : *ὅτι χολή*, 426 b 4 *ἄγεται* : *ἄγεται*, 428 b 16 *ὑπάρχει* : *ὑπάρχειν*, 428 b 20 *διαψεύσασθαι* : *διαψεύδεσθαι*, 428 b 30 *ἔχοι* : *ἔχει*, 429 a 2 *γιγνομένη* : *γιγνομένης*, 429 b 23 *ἀπαθής* : *ἀπαθές*, 430 a 11 *ἐκεῖνο* : *ἐκεῖνα*, 431 b 25 *δυνάμεις* : *τὰ δυνάμει*, 432 a 7 *αἰσθανόμενον* : *αἰσθανόμενος*, 432 a 12 sq. *φάντασμα* : *φαντάσματα*, 432 a 27 *ταύτας* : *ταῦτα*, *ἰδ.* *φανεῖται* : *φαίνεται* (*φαίνονται*), 432 b 1 *τό* : *τῷ*.

(3) Where the words are the same in cod. E as in the other six codices, the order is sometimes different. The following are instances: 404 a 5 *τῆς ὅλης φύσεως στοιχεῖα λέγει* : *στοιχεῖα λέγει τῆς ὅλης φύσεως*, 404 a 28 *ψυχὴν ταυτόν* : *ταυτόν (τὴν) ψυχὴν*, 406 b 32 *κύκλους δύο* : *δύο κύκλους*, 407 b 2 *ἂν κινοῖτο* : *κινοῖτο ἂν*, 411 b 21 *μὴ καὶ* : *καὶ μὴ*, 428 a 7 *ὑπάρχοντος τούτων* : *τούτων ὑπάρχοντος*, 429 a 25 *τις γὰρ ἂν* : *γὰρ ἂν τις*, *ἰδ.* *ἡ ψυχρὸς ἢ θερμὸς* : *θερμὸς ἢ ψυχρὸς*, 430 a 18 *ἀπαθὴς καὶ ἀμυγῆς* : *ἀμυγῆς καὶ ἀπαθὴς*, 430 a 19 *δ' αὐτό* : *αὐτὸ δ'*, 431 b 21 *ἔστι πάντα γὰρ ἡ* : *ἔστι πάντα ἡ γάρ*, 432 b 30 *διώκειν ἢ φεύγειν* : *φεύγειν ἢ διώκειν*, 433 a 9 *ταῦτα δύο* : *δύο ταῦτα*, 433 a 27 *κινεῖ μὲν* : *μὲν κινεῖ*, 433 b 18 *κίνησις ὀρεξίς* : *ὀρεξίς κίνησις*.

<sup>1</sup> Stapfer's statement (*Krit. Stud.*, p. 21) "E τι STUVWX ὅτι" will mislead no one. By a similar inadvertence he has (p. 23) interchanged the authorities for 403 a 29 *ὀρῶσαντο* and *ὀρῶσαιτο*.

<sup>2</sup> See Stapfer, *Stud.*, p. 5.

From the instances given under (A) we may at once conclude that neither any single manuscript of the group S-X nor their common archetype was copied from cod. E, but we cannot directly infer that cod. E was not copied from the archetype of group S-X, for the omissions in cod. E, even the larger ones, are accidental. But the passages adduced under (B) sufficiently prove that cod. E is independent of the archetype of the group S-X. Chance might account for two or three or even a dozen variations, but not for 50. There can be no connexion between cod. E and the archetype of the group S-X.

But had the six manuscripts of the group S-X a common archetype? Yes: not because of the common omissions, which are few and insignificant, but because of such variants as the following: 403 a 19 *σημεῖον : μὴνύει*, the transposition of 404 a 5 already noticed, 425 b 1 *χολήν ὅτι : ὅτι χολή*, 426 b 2 *λιπαρά : πικρά*, 434 a 3 *λύπην καὶ ἡδονὴν ἔχουσα : λύπη καὶ ἡδονὴ ἐνοῦσα*. Taken singly, the manuscripts of the group S-X are full of mistakes. There are many cases where they diverge from each other in all manner of ways; but, as soon as we get a reading or arrangement of the words which presents a noteworthy difference from that of cod. E, they all agree. In fact, it has been proposed to use a fresh symbol for the agreement of the group S-X, as opposed to cod. E.

But can we say how the manuscripts of the group S-X are related to each other? For example, in 403 b 2 U X have *εἶδος*, S T V W *ὁ δὲ* or *ὅδε*. Possibly the genuine tradition of the archetype may have come down to us in the numerical minority of the representatives of the group. It may be that four of the six represent one lost codex of equal value with the remaining two. Let us consider, besides 403 b 2 just mentioned, where U X have *εἶδος*, S T V, like E, *ὁ δὲ* and W *ὅδε*, 402 a 19 *ἀπόδειξις τίς*, where *τίς* is omitted, not only by T U W X, but also by E; 403 b 26 *δυσὺν* T U, *δυσὺν* E, *δυσὺν* S V W X; 404 b 31 *ἀσωμάτων* X, *ἀσωμάτων* E S T U V W; 405 a 11 *λεπτομέρειαν* corr. E and T, *μικρομέρειαν* pr. E U V W X, *μικρολεπτομέρειαν* S; 408 b 8 *τὸ* V, *τῷ* reliqui codd.; 410 a 6 *γένοντο* T V W, *ἐγένοντο* E S U X; 410 b 30 *δὲ* T W X and corr. E, *δὴ* reliqui codd.; 425 a 2 *τοῦ δι'* TW, *τοῖν* L, om. E S U V X; 426 a 1 *εἴπειν* TW, *εἴποιεν* E L, *εἶποι* γ, *φήσειεν* S U V X; 429 b 13 *ἔχοντι* T W X, om. E L S U V; 429 b 20 *ἄλλο* T V X, *ἄλλω* reliqui codd.; 431 b 27 *τὸ* TW, *τὸ* om. E L S U V X; 432 a 5 *ἐν* T W X, *ἐν* om. E L S U V; 433 b 16 sq. *τὸ ὀρεκτικὸν* T W X, *τὸ* om. E L S U V.

Cod. T and cod. W almost universally go together in the third book.

Another circumstance confirms the conclusion that the six manuscripts of the group S-X are derived from a common archetype. After cod. E had been copied, it was subjected to much revision and many corrections were entered, either between the lines or in the margin. A great number of these, which on palaeographical grounds are attributed to a second hand, agree in the main with the readings of the S-X group. Hence it may be inferred that the reviser, whether the original scribe or someone else<sup>1</sup>, collated cod. E with a manuscript which, whether it was or was not the archetype of the group S-X, agreed generally with the distinctive readings of that group. In other words, corr. E agrees in the main with the manuscripts of the group S-X where they differ from the first hand<sup>2</sup> of E. Let us assume, then, that the text of Books I. and III. has come down by two independent traditions. The variations in Book II. are of minor importance, whether because, as Torstrik supposed, cod. E in the second Book follows a different authority from that which it follows in the other two Books, or because the two traditions never diverged to the same extent in this Book as in the others. It cannot be claimed that either is infallible. To begin with (A) omissions and insertions: if we examine the several instances in detail, the presumption is that the omissions are due to carelessness. The good manuscript E has this peculiarity in common with the late manuscript P<sup>1</sup> of the *Politics*<sup>3</sup>, that it is apt to omit small words. It would be absurd to prefer a text which omitted 403 a 6 δέ, 403 a 18 γάρ, 407 b 9 γε (cf. 407 b 32, 409 a 30), 408 b 15 οὐσης, 408 b 19 οὐσα,

<sup>1</sup> In Books I. and III. Stapfer distinguishes three hands E, E<sup>2</sup>, E<sup>3</sup>, admitting that E<sup>2</sup> is hardly to be distinguished from E and that E<sup>3</sup> is the same hand in which Book II. is copied: "Eae igitur [correctiones] plurimae inveniuntur in primo et tertio libro, aliquot in secundo. Alterius vero manus scriptura proxime accedit ad prioris manus similitudinem. Etenim ab utrius calamo manaverit scriptura, solum cognosci potest cum ex aliarum quarundam litterarum forma, tum ex diphthongo 'eu' facillime concluditur...Accedit, ut secunda manus aliquoties litteras radendo, prior nonnisi expungendo debeat. Tertiae vero manus litterarum ductus idem sunt ac librarii secundi libri" (Stapfer, *Studia*, p. 4).

<sup>2</sup> See Stapfer, *Krit. Stud.* p. 34: "Derselbe [der Archetypus von S T U V W X] gilt allgemein für verloren. Auch ich war dieser Ansicht, bis eingehendere Studien über die Korrekturen in E mich belehrten, dass die von zweiter Hand nach keiner anderen Vorlage gemacht sein können als nach diesem Archetypus. Die Gründe hierfür sind teils paläographischer, teils kritischer Natur."

<sup>3</sup> Since E is of the tenth century, P<sup>1</sup> of the fifteenth, it is quite possible that the archetype from which Demetrius Chalcondylas derived his copy may have deserved the censure which Newman passes upon it, vol. II. p. lvii, III. p. vii sq., *Class. Rev.* VII. p. 305.

429 b 21 ἄρα, 430 a 4 ἡ before θεωρητική (cf. 431 b 29, 432 a 15, b 15, b 28, 433 b 4), 431 b 24 εἰς, 432 b 13 τί, 433 b 31 καί: and these omissions are doubtless due to the same haste or carelessness which has mangled the text by curtailment in 409 a 10, 425 b 7, 428 b 3 sq., 432 a 2, as well as by the longer lacunae already enumerated. Only three times does it appear that cod. E is undoubtedly right in its omissions; 426 b 1, 429 b 8, 433 b 3. For my part, though I have not had the courage of my opinion, I think that in 428 b 2 φαίνεται δέ γε καὶ ψευδῇ is an improvement<sup>1</sup>: while, if we compare 433 a 9 with 433 a 17, two passages which ought to be similarly worded, the balance of probability surely inclines to the supposition that in both the scribe of E or of its archetype is at his old trick of omitting a small word, even though in the former passage all our other sources join in the error. On the other hand, cod. E seems redundant in 407 b 24, 411 b 4, 29, 425 b 3, 429 b 11, 13 (ὅς), 16: and that this, too, is due to carelessness is very evident in the dittography of διὰ καὶ 425 b 3 and the impossible article in 429 b 16. (B) A comparison, again, of the variations which depend either upon a different word (e.g. 403 a 19 σημείον : μνηύει) or a different inflexion of the same word shows that, although E is undoubtedly the best manuscript, it has no decisive superiority over the common archetype of the S-X group. The text printed in this edition, which differs very little from Torstrik and still less from Biehl, agrees in this respect 23 times with cod. E against the S-X group and 29 times with the latter against cod. E. On the other hand, out of 15 instances where the same words are differently arranged in cod. E and in the S-X group, I follow my predecessors in preferring the order of cod. E 12 times and the order of the S-X group only 3 times, viz. 411 b 21, 433 a 9, 433 b 18: though, as will be seen from my note on the last passage, I incline to think that there also the order given by cod. E may have been that of the original text. Biehl himself, who of all editors adhered most closely to cod. E, sometimes departed from it, and I have gone still further in this direction, as in 402 a 12, 402 a 19, 403 b 17, 407 a 26, 27, 408 a 21, 412 a 17, 418 b 22, 420 a 4, 427 a 14, 428 b 4, 431 b 25, 26, 431 b 27. On the other hand, I return to the reading of cod. E in 404 b 10, 413 a 29 sq., 426 a 27, 433 b 17.

Two other manuscripts have been collated since Bekker completed his labours. The one is Parisiensis 2034, collated by

<sup>1</sup> To the lemma of Philoponus 505, 15 I attach little value for reasons given below.



Trendelenburg and called by him P. Belger, however, preferred to denote it by y and has been followed by subsequent editors. It offers many peculiarities, which may sometimes be due to conjectural emendation or to the arbitrary selection of a scribe who was acquainted with the variations in older manuscripts. The other is Vaticanus 1339, from which Rabe published a collation of the second Book in 1891. Its symbol is P.

Besides certain essays by Alexander of Aphrodisias<sup>1</sup> and his own treatise *De Anima*, in which he follows the lines of Aristotle's, we have two paraphrases, one by Themistius and one by Sophonias. These are not, however, entirely paraphrase: a large proportion of commentary is interspersed. We have also two commentaries, one by Simplicius, the other ostensibly by Philoponus. Hayduck, who has re-edited Philoponus, inclines to think (p. v) that the commentary on Book III. is not by the same author as that upon Books I. and II., and attributes it conjecturally to Stephanus, the author of the extant commentary on *Περὶ ἑρμηνείας*. Four of these writers go back centuries beyond our oldest manuscript. Alexander lived at the end of the second century A.D., Themistius belongs to the latter half of the fourth, while Simplicius and Philoponus were contemporaries in the reign of Justinian in the sixth century. Of Sophonias Fabricius<sup>2</sup> says: "Quis ille Sophonias fuerit et quando vixerit, non liquet." But an extant manuscript of his paraphrase is of the thirteenth or fourteenth century. The writings of Alexander, including his lost commentary on *De Anima*, were used by all his successors, and Simplicius and Philoponus betray an acquaintance with Themistius<sup>3</sup>. So far, then, the suggestion of a continuous tradition among the commentators of Aristotle may be readily admitted. But with Alexander our stream of tradition stops: a gap of five centuries separates him from Aristotle and Theophrastus. It is a perfectly gratuitous assumption that these later commentators represent the unbroken tradition of the Peripatetic School<sup>4</sup>, especially as Alexander is the

<sup>1</sup> viz. those collected in pp. 101—150 of the *Mantissa* (formerly known as the second book of his *De Anima*), also *Ἀποπλὰι καὶ λύσεις* I. 2, 8, 11a, 11b, 17, 26, II. 2, 8, 9, 10, 24, 25, 26, 27, III. 2, 3, 6, 7, 8, 9, *Περὶ κινήσεως καὶ ἀδύναμει*, pp. 213 sqq., ed. Bruns.

<sup>2</sup> As cited by Trend.<sup>2</sup>, p. xi.

<sup>3</sup> Simpl. 151, 14, Philop. 408, 25; 409, 3; 410, 1. 35; 418, 25; 450, 9. 19; 508, 20; 514, 29. Cf. also Priscianus Lydus, *Prooem. Solutionum*, 42, 18.

<sup>4</sup> Rodier, vol. I. p. ii: "En lisant ces commentaires, on s'aperçoit bientôt que ceux qui les ont écrits possédaient, pour l'exégèse d'Aristote, des traditions qui remontaient jusqu'à ses disciples immédiats."

only one of them who can be reckoned as a genuine Peripatetic. For the interpretation and criticism of Aristotle in the earliest days of the school our only authority is Priscianus Lydus, a contemporary of Simplicius and Philoponus, who wrote *Metaphrasis in Theophrastum*. A portion of this is preserved and was edited by Bywater for the *Supplementum Aristotelicum*.

What aid, then, do these testimonia furnish to the text? From the nature of the case they must be subsidiary to ancient manuscripts. A paraphrast may indeed be content to repeat his author without change, as Themistius frequently does. But his main object is to render the meaning clear, and the freedom with which, in the pursuance of this object, he varies either the actual words or the arrangement of the words and sentences of his author must, even under the most favourable circumstances, render him a very unsafe guide to the reconstruction of the text. If anyone thinks this a harsh judgment, let him consider what sort of an idea we should have of the text of this treatise, supposing the manuscripts and commentaries had been lost and only Themistius and Sophonias preserved. The problem of determining what text or texts the paraphrast had before him is analogous to the problem of determining the reading of the manuscript or manuscripts used by William of Moerbeke when he made his Latin translation. We never can be sure that the paraphrast or translator confined himself to a single manuscript. In the particular case of Sophonias, however, the difficulty of this problem is greatly diminished. The attention bestowed upon him by Trendelenburg, Torstrik, Hayduck and Stapfer<sup>1</sup> has established this result, that his paraphrase agrees more nearly with cod. E than with any other of our manuscripts. The case of Themistius, Simplicius and Philoponus is different. A study of the critical notes in this edition will show that their evidence, such as it is, favours sometimes cod. E and at other times the readings of the S-X group. Sometimes, as may be seen from my notes on 420 a 4, the words of Themistius suggest one reading, but can be shown to be in all probability an intentional variation upon the other. The evidence to be obtained from the commentaries of Simplicius and Philoponus must in each case be weighed independently of the prefixed lemma. I heartily endorse the judgment of Torstrik, p. vi: Philoponi et Simplicii ῥητά nullius sunt momenti. He adds: pertinent enim ad deterioris

<sup>1</sup> *Studia*, pp. 15—25.

familiae codices: licebatque eos negligere uno excepto loco Sed quum in Philoponi commentario passim natarent quaedam ῥητά antiquiora et librariorum errore cum ipsa interpretatione commixta, haec exscripsi...duabus de causis: primum quod habent quaedam bona: deinde ne nocerent: possunt enim facile pro iis haberi quae ipse Philoponus apud Aristotelem legerit. It is by no means certain that the lemma comes from the commentator at all: at most, he was probably content for brevity to indicate the first words and the last, with ἕως τοῦ interposed, or the first words followed by καὶ τὰ ἐξῆς, a practice which may still occasionally be detected in Simplicius, e.g. in *Phys.* 50, 5; 113, 20; 114, 23; 440, 18; 935, 21; 1220, 27; *De Anima* 71, 11 sq.; 76, 13; 93, 15; 99, 5; 163, 27; 192, 22; cf. Philop. 431, 30. Subsequent copyists would expand the lemma<sup>1</sup> and piously supply the missing words from the best text of Aristotle available, without paying much regard to the indications of the commentary appended. This may be illustrated by a comparison of the Aldine editions of Simplicius and Philoponus with those recently edited by Hayduck. Trincavellus took his lemma with almost unfailing regularity from the Aldine edition of Aristotle. This fact is many times admitted by Hayduck in the course of his critical apparatus. See, e.g., 315, 8; 374, 14; 388, 11; 394, 33; 423, 25; 425, 1; 441, 12; 451, 29; 461, 1; 467, 25; 473, 30; 483, 17; 492, 22; 498, 12; 505, 15; 513, 21; 530, 28; 533, 14; 553, 17; 562, 5; 569, 25; 606, 3. But the same thing is true of scores of passages where Hayduck has not pointed out the dependence of Trincavellus upon the Aldine, e.g., Philop. 179, 27 καὶ om.; 181, 10 δέ; 189, 8 παραλογώτερον; 189, 28 ἀπολαβεῖν; *ib.* περὶ insert.; 192, 14 τῇ om.; 210, 26 ὅλη; 236, 14 καὶ ὡς περ; 236, 15 οὕτω καί; 237, 27 καὶ πότερον μόρια; 260, 4 δὲ τὸ; 260, 26 τὰ μέν; 263, 25 λόγον; 267, 18 τῶν ἐν τοῖς ζώσις ἔργων; 273, 34 ἔστι δέ; 274, 25 ἡ ψυχῇ; 283, 21 ἐτι τροφή πάσχει τι; 284, 30 ἐπεὶ δ' οὐδέ; 320, 2 ὅτι om.; 345, 31 δὲ καί; 423, 26 ἐκδηλον; 477, 3 sq. μέν, ὅταν ἀγῆται, εἰλικρινῇ καὶ ἀμυγῇ ὄντα ἀγεται εἰς; 524, 18 αὐτοῦ; 585, 17 post κινοῦν add. πρώτως. In all these cases the reading indicated must have come from the Aldine edition. It is not known from any manuscript of *De Anima*. Besides these differences, wherever the Aldine edition presents a peculiar order of words, this order is adopted by Trincavellus for the lemma of Philoponus. Asulanus made a similar use of the Aldine Aristotle for his edition of Simplicius, as may

<sup>1</sup> Trincavellus certainly did this. See Hayduck's critical notes on Philop. 211, 9; 288, 22; 304, 10; 461, 1.

be seen from such instances as Simpl. 11, 1; 16, 31; 23, 1; 72, 17; 82, 13; 271, 11. It is reasonable to infer that the same thing had been done before. For, even when the interference of the Aldine Aristotle is excluded, as it is in Hayduck's edition, lemma and interpretation are not always completely in accord. See for example Philop. 247, 13; 303, 31; 461, 1, where Hayduck has adapted the lemma to suit the interpretation (as he has also done e.g. 475, 28; 534, 17; 574, 23); 553, 17. Compare also 45, 16 σώματος with 46, 5 τοῦ σώματος; 186, 22 with 186, 24; 241, 16 with 241, 21 and 261, 15; 315, 7 with 315, 10; 348, 9 with 348, 10; 377, 32 with 378, 1; 425, 1 with 425, 22; 493, 15 with 493, 17; 560, 23 with 560, 26. The same tendency is seen in Themistius, and the last editor, Heinze, may be within his rights in altering the words or the order of the words in the paraphrase, in spite of his manuscripts, to ensure consistency with the context as a whole. Two notable instances are Them. 116, 18, where Heinze has substituted *τῶν* for *ταῦτα*, and Them. 58, 9 sq., where the alteration affects the order of the words. The commentators, then, as distinct from their copyists, are only to be held responsible for those variants which they either distinctly attest by *διττῇ ἢ γραφῇ* and the like or cite *verbatim* in the course of their interpretations. Even then caution is needed, since Philoponus is not alone in using *φησὶν* for a paraphrase and alteration of the Aristotelian text, much as Froude may be said to have violated the sanctity of inverted commas when he printed between them his own abstracts of the documents he cited. All beyond this is matter of inference, often no doubt correct, but seldom sufficiently strong to stifle a feeling of uneasiness and uncertainty. For the rest, the readings of Simplicius and Philoponus, and indeed of Alexander and Plutarch in the few cases where we have information about them, do not seem uniformly to favour either cod. E or the S-X group. A few instances of bad readings are appended. In 431 a 24 Simplicius read *όμογενῆ*: if he had consulted Philoponus 561, 6 sq. he might have found the right reading, *μη όμογενῆ*. In 416 b 27 Alexander and Simplicius read *κινουν μόνον* with the S-X group, while cod. E has the support of Themistius and Sophonias. Philoponus knew both readings (288, 10 sq.). Where the manuscripts leave us in the lurch, it is seldom that a commentator helps us out, as Simplicius undoubtedly does in 403 b 12 by reading *ῆ*, not *ῆ*, and in 431 a 23 by reading *δν*, not *δν*. It is very significant that in both these cases the change required is a change of breathing, which would not be indicated in an uncial manuscript or older

kind of papyrus. The reader of an ancient book understood as no modern can the meaning of the line νοῦς ὁρῇ καὶ νοῦς ἀκούει, τᾶλλα κωφὰ καὶ τυφλά<sup>1</sup>. On the other hand compare 431 a 11, where Simplicius prefers ἦ to the ῆ which is presented (rightly, as I think) by Philoponus. Again, the right sense could sometimes be got out of a bad reading. Thus in 431 b 17 Simplicius read with most of the S-X group ὅλως δὲ ὁ νοῦς ἐστὶν ὁ κατ' ἐνέργειαν τὰ πράγματα νοῶν, but he escaped the absurdity which results from such a reading by suggesting that τὰ πράγματα should be transposed to precede ὁ κατ' ἐνέργειαν (Simpl. 279, 7-9). In short, the text which the commentators had before them was substantially the same as that of our manuscripts. They all found in it μαρτυρεῖ τὸ νῦν λεχθὲν 410 a 29, τῶν αἰτίων 430 b 25, ἀλλὰ μὴν οὐδὲ ἀγέννητον 434 b 4 sq. Where we are perplexed, so as a rule were they, and we look to them in vain to solve the riddle of such passages as 403 b 2, 407 a 11, 407 b 28 sq., 408 a 25 sq., 411 b 25, 412 a 17, 425 b 1, 2, 426 a 27, 427 a 10, 13, 14, 428 b 19 sq., 428 b 30—429 a 2, 430 b 14 sqq., 26 sqq., 433 b 17, 18, 434 a 12—15.

<sup>1</sup> Epicharmus apud Plut., *De Sollertia animalium*, 961 A.

## EXPLICANTUR SIGLA

QUIBUS IN APPARATU CRITICO USI SUMUS.

E, codex Parisiensis 1853.

L, „ Vaticanus 253.

P, „ Vaticanus 1339, ex ed. H. Rabe.

S, „ Laurentianus 81.

T, „ Vaticanus 256.

U, „ Vaticanus 260.

V, „ Vaticanus 266.

W, „ Vaticanus 1026.

X, „ Ambrosianus H 50.

y, „ Parisiensis 2034.

m, „ Parisiensis 1921.

Ald., editio Aldina.

Basil., „ Basileensis tertia.

Sylb., „ Sylburgiana.

Bek., „ Bekkeri Academica.

Trend., „ Trendelenburgii.

Torst., „ Torstrikii.

Bus., „ Bussemakeri (Didotiana).

Bhl., „ Biehlii.

Rt., „ Rodieri.

Bon., Bonitz.

Alex., Alexander Aphrodisiensis.

Them., Themistius.

Simpl., Simplicius.

Philop., Philoponus.

Soph., Sophonias.

Prisc. Lyd., Priscianus Lydus.

vet. trans., vetusta translatio latina ex editione Juntina, Venet. 1550, et  
Thomae Aquinatis op. tom. XX., ed. Parmae 1866.

BJ., Jahresbericht üb. die Fortschr. etc. herausg. v. C. Bursian etc.

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ΠΕΡΙ ΨΥΧΗΣ.

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## ΠΕΡΙ ΨΥΧΗΣ Α.

1 Τῶν καλῶν καὶ τιμίῳ τὴν εἶδῃσιν ὑπολαμβάνοντες, μάλ- 402a  
 λον δ' ἐτέραν ἐτέρας ἢ κατ' ἀκρίβειαν ἢ τῷ βελτιόνων τε  
 καὶ θαυμασιωτέρων εἶναι, δι' ἀμφοτέρα ταῦτα τὴν περὶ τῆς ψυ-  
 χῆς ἱστορίαν εὐλόγως ἂν ἐν πρώτοις τιθείημεν. δοκεῖ δὲ καὶ  
 πρὸς ἀλήθειαν ἅπασαν ἢ γνῶσις αὐτῆς μεγάλα συμβάλ- 5  
 λεσθαι, μάλιστα δὲ πρὸς τὴν φύσιν· ἔστι γὰρ οἶον ἀρχὴ  
 τῶν ζώων. ἐπιζητοῦμεν δὲ θεωρῆσαι καὶ γινῶναι τὴν τε φύ-  
 σιν αὐτῆς καὶ τὴν οὐσίαν, εἰθ' ὅσα συμβέβηκε περὶ αὐτῇ·  
 ὧν τὰ μὲν ἴδια πάθη τῆς ψυχῆς εἶναι δοκεῖ, τὰ δὲ δι'  
 2 ἐκεῖνην καὶ τοῖς ζώοις ὑπάρχειν. πάντα δὲ πάντως ἐστὶ τῶν 10  
 χαλεπωτάτων λαβεῖν τινὰ πίστιν περὶ αὐτῆς. καὶ γὰρ ὄν-  
 τος κοινοῦ τοῦ ζητήματος καὶ πολλοῖς ἐτέροις, λέγω δὲ τοῦ περὶ  
 τὴν οὐσίαν καὶ τὸ τί ἐστι, τάχ' ἂν τῷ δόξειε μία τις εἶναι  
 μέθοδος κατὰ πάντων περὶ ὧν βουλόμεθα γινῶναι τὴν οὐ-  
 σίαν, ὥσπερ καὶ τῶν κατὰ συμβεβηκὸς ἰδίων ἀπόδειξις, 15  
 ὥστε ζητητέον ἂν εἴη τὴν μέθοδον ταύτην. εἰ δὲ μὴ ἐστὶ μία  
 τις καὶ κοινὴ μέθοδος περὶ τὸ τί ἐστίν, ἔτι χαλεπώτερον  
 γίνεται τὸ πραγματευθῆναι· δεήσει γὰρ λαβεῖν περὶ ἑκα-  
 στον τὶς ὁ τρόπος. ἔαν δὲ φανερόν ᾗ, πότερον ἀπύδειξις τίς  
 ἐστίν ἢ διαίρεσις ἢ καὶ τις ἄλλη μέθοδος, ἔτι πολλὰς 20

Codices ESTUVWXY: libro secundo P, libro tertio L.

1. μάλλον...3. εἶναι Alexander Philopono teste spuria notabat || 2. τε om. E Torst., lege-  
 runt Philop. Soph. || 3. ταῦτα om. E Torst., leg. Philop. Soph. et, ut videtur, Them. 1, 18 ||  
 περὶ om. STUWX Bek. Trendl., add. Soph. Torst. || τῆς om. V y Soph. || 9. κοινὰ pro  
 δι' ἐκεῖνην y, τὰ δὲ κοινὰ καὶ τοῖς ζώοις δι' ἐκεῖνην U, receptum textum tuentur Them.  
 Soph. || 10. δὲ καὶ πάντως STUVW y, πάντα δὲ πάντως etiam Philop. || 12. καὶ om.  
 EX Bek. Trend. Biehl Rodier || 13. τὸ τοῦ SVWX Philop. Bek. Trendl., τὰ TU ||  
 15. ἀπόδειξιν SUWX Bek., ἢ ἀπόδειξις T, ἀπόδειξις etiam Soph. || 17. καὶ κοινὴ τις  
 UWX y || τὸ τοῦ STUWX || 19. post τρόπος virgulam Bek. || ὅταν SUW, εἰ V,



## DE ANIMA. Book I.

Cognition is in our eyes a thing of beauty and worth, and this <sup>1</sup> is true of one cognition more than another, either because it is exact or because it relates to more important and remarkable objects. On both these grounds we may with good reason claim a high place for the enquiry concerning the soul. It would seem, too, that an acquaintance with the subject contributes greatly to the whole domain of truth and, more particularly, to the study of nature, the soul being virtually the principle of all animal life.

The subject of enquiry. Our aim is to discover and ascertain the nature and essence of soul and, in the next place, all the accidents belonging to it; of which some are thought to be attributes peculiar to the soul itself, while others, it is held, belong to the animal also, but owe their existence to the soul. But every- <sup>2</sup> where and in every way it is extremely difficult to arrive at any trustworthy conclusion on the subject. It is the same here as in many other enquiries. What we have to investigate is the essential nature of things and the What. It might therefore be thought that there is a single procedure applicable to all the objects whose essential nature we wish to discover, as demonstration is applicable to the properties which go along with them: in that case we should have to enquire what this procedure is. If, however, there is no single procedure common to all sciences for defining the What, our task becomes still more difficult, as it will then be necessary to settle in each particular case the method to be pursued. Further, even if it be evident that it consists in demonstration of some sort or division or some other procedure, there

*ἐάν* etiam Simpl. p. 10, 4 || *τις* post *ἀπόδειξις* om. pr. E T U W X, etiam Philop. Biehl (in alt. ed.) || 20. post *μέθοδος* punctum Bek. || *ἐτι δὲ πολλὰς* T U V W Bek., *δὲ* om. etiam Soph.

ἀπορίας ἔχει καὶ πλάνας, ἐκ τίνων δεῖ ζητεῖν· ἄλλαι γὰρ ἄλλων ἀρχαί, καθάπερ ἀριθμῶν καὶ ἐπιπέδων.

- 3 πρῶτον δ' ἴσως ἀναγκαῖον διελεῖν ἐν τίνι τῶν γενῶν καὶ τί ἐστι, λέγω δὲ πότερον τόδε τι καὶ οὐσία ἢ ποιὸν ἢ ποσὸν ἢ καὶ τις ἄλλη τῶν διαιρεθειςῶν κατηγοριῶν, ἔτι δὲ πότερον τῶν ἐν 25 δυνάμει ὄντων ἢ μᾶλλον ἐντελέχειά τις· διαφέρει γὰρ οὗ τι 4 σμικρόν. σκεπτέον δὲ καὶ εἰ μεριστὴ ἢ ἀμερής, καὶ πότερον 402b ὁμοειδῆς ἅπασα ψυχὴ ἢ οὐ· εἰ δὲ μὴ ὁμοειδῆς, πότερον εἶδει διαφέρουσιν ἢ γένει. νῦν μὲν γὰρ οἱ λέγοντες καὶ ζητοῦντες περὶ ψυχῆς περὶ τῆς ἀνθρωπίνης μόνης εἰκόασιν ἐπι- 5 σκοπεῖν. εὐλαβητέον δ' ὅπως μὴ λανθάνῃ πότερον εἰς ὁ λό- 5 γος αὐτῆς ἐστί, καθάπερ ζώου, ἢ καθ' ἐκάστην ἕτερος, οἶον ἵππου, κυνός, ἀνθρώπου, θεοῦ, τὸ δὲ ζῶον τὸ καθόλου ἦτοι οὐ- θέν ἐστιν ἢ ὕστερον· ὁμοίως δὲ καὶ εἰ τι κοινὸν ἄλλο κατη- 6 γοροῖτο· ἔτι δ' εἰ μὴ πολλαὶ ψυχαὶ ἀλλὰ μόρια, πότερον δεῖ 10 ζητεῖν πότερον τὴν ὅλην ψυχὴν ἢ τὰ μόρια. χαλεπὸν δὲ καὶ 10 τούτων διορίσαι ποῖα πέφυκεν ἕτερα ἀλλήλων, καὶ πότερον τὰ μόρια χρὴ ζητεῖν πότερον ἢ τὰ ἔργα αὐτῶν, οἶον τὸ νοεῖν ἢ τὸν νοῦν καὶ τὸ αἰσθάνεσθαι ἢ τὸ αἰσθητικόν· ὁμοίως 7 δὲ καὶ ἐπὶ τῶν ἄλλων. εἰ δὲ τὰ ἔργα πότερον, πάλιν ἂν 15 τις ἀπορήσειεν εἰ τὰ ἀντικείμενα πρότερα τούτων ζητητέον, οἶον 15 8 τὸ αἰσθητὸν τοῦ αἰσθητικοῦ καὶ τὸ νοητὸν τοῦ νοῦ. ἔοικε δ' οὐ μόνον τὸ τί ἐστι γινῶναι χρήσιμον εἶναι πρὸς τὸ θεωρῆσαι τὰς αἰτίας τῶν συμβεβηκότων ταῖς οὐσίαις, ὥσπερ ἐν τοῖς μαθήμασι τί τὸ εὐθὺ καὶ καμπύλον ἢ τί γραμμὴ καὶ ἐπί- πεδον πρὸς τὸ κατιδεῖν πόσαις ὀρθαῖς αἰ τοῦ τριγώνου γωνίαι 20 ἴσαι, ἀλλὰ καὶ ἀνάπαλιν τὰ συμβεβηκότα συμβάλλεται μέ- 20 γα μέρος πρὸς τὸ εἰδέναι τὸ τί ἐστιν· ἐπειδὴν γὰρ ἔχω-

16. μᾶλλον] μόνον E (Trend.), μᾶλλον tuentur Them. Philop. Simpl. Soph. || τι om SVWXY, legi Soph. || 402 b, 2. ὁμοειδῆς utrobique TUVWX, ὁμοειδῆς tuentur Them. Philop. Simpl. || 4. μόνον y Torst., μόνης corr. E et reliqui, etiam Them. Philop. 36, 7 Soph. || 6. ἐκάστην pr. E Torst., etiam Soph., ἕτερον V y, ἕκαστον reliqui ante Torstrikium omnes, etiam, ut videtur, Simpl. 13, 4 et Philop. in prooemio ad lib. II. 205, 20 || 7. 8?] γὰρ V, Alex. ἀπ. καὶ λόγ. (ed. Bruns) p. 21, 15. 22, 2. 24, 4, etiam Soph. || 8. κατηγοροῖται E, sed η in rasura (Trend.), κατηγορεῖται Torst., κατηγοροῖτο reliqui, etiam Simpl. Alex. 23, 19 || 11. τοῦτο V || ἀλλήλων ἕτερα X || 12. δεῖ UWX || 15. πότερον TUVWX Philop. Soph. Bek. Trend. || 16. νοῦ EVX, in textum recepit Biehl (cf. 429 a, 17), νοητὸν S, νοητικοῦ reliqui et scripti et impressi, etiam Philop., prō αἰσθητικοῦ et νοητικοῦ legi vult αἰσθάνεσθαι et νοεῖν Belger, Hermes, 1878, p. 302, at αἰσθητικοῦ etiam Philop. || 19. καὶ τί τὸ κ. SUWY, καὶ τί κ. TX || 22. εἰδῆσαι STUVXY, εἰδῆσειν V.

is still room for much perplexity and error, when we ask from what premisses our enquiry should start, for there are different premisses for different sciences; for the science of numbers, for example, and plane geometry.

The first thing necessary is no doubt to determine under which 3  
 of the summa genera soul comes and what it is; I mean, 4  
 whether it is a particular thing, i.e. substance, or is  
 quality or is quantity, or falls under any other of the categories  
 already determined. We must further ask whether it is amongst  
 things potentially existent or is rather a sort of actuality, the  
 distinction being all-important. Again, we must consider whether 4  
 it is divisible or indivisible; whether, again, all and every soul is  
 homogeneous or not; and, if not, whether the difference between  
 the various souls is a difference of species or a difference of genus:  
 for at present discussions and investigations about soul would  
 appear to be restricted to the human soul. We must take care not 5  
 to overlook the question whether there is a single definition of soul

Is there  
 a single  
 definition? answering to a single definition of animal; or whether  
 there is a different definition for each separate soul, as for  
 horse and dog, man and god: animal, as the universal,  
 being regarded either as non-existent or, if existent, as logically  
 posterior. This is a question which might equally be raised in  
 regard to any other common predicate. Further, on the assump- 6  
 tion that there are not several souls, but merely several different

Questions  
 of pro-  
 cedure. parts in the same soul, it is a question whether we should  
 begin by investigating soul as a whole or its several  
 parts. And here again it is difficult to determine which  
 of these parts are really distinct from one another and whether the  
 several parts, or their functions, should be investigated first. Thus,  
 e.g. should the process of thinking come first or the mind that  
 thinks, the process of sensation or the sensitive faculty? And so  
 everywhere else. But, if the functions should come first, again 7  
 will arise the question whether we should first investigate the  
 correlative objects. Shall we take, e.g., the sensible object before  
 the faculty of sense and the intelligible object before the intellect?

It would seem that not only is the knowledge of a thing's 8  
 essential nature useful for discovering the causes of its  
 attributes, as, e.g., in mathematics the knowledge of what  
 is meant by the terms straight or curved, line or surface,  
 aids us in discovering to how many right angles the angles of a  
 triangle are equal: but also, conversely, a knowledge of the  
 attributes is a considerable aid to the knowledge of what a thing is.

A test of  
 a good  
 definition.

μεν ἀποδιδόναι κατὰ τὴν φαντασίαν περὶ τῶν συμβεβηκό-  
των, ἣ πάντων ἢ τῶν πλείστων, τότε καὶ περὶ τῆς οὐσίας  
ἐξομέν τι λέγειν κάλλιστα· πάσης γὰρ ἀποδείξεως ἀρχὴ τὸ <sup>25</sup>  
τί ἐστίν, ὥστε καθ' ὅσους τῶν ὀρισμῶν μὴ συμβαίνει τὰ συμ-  
βεβηκότα γνωρίζειν, ἀλλὰ μὴδ' εἰκάσαι περὶ αὐτῶν ἐν- <sup>403a</sup>  
μαρές, δῆλον ὅτι διαλεκτικῶς εἴρηνται καὶ κενῶς ἅπαντες.

9 ἀπορίαν δ' ἔχει καὶ τὰ πάθη τῆς ψυχῆς, πότερόν ἐστι πάν-  
τα κοινὰ καὶ τοῦ ἔχοντος ἢ ἐστὶ τι καὶ τῆς ψυχῆς ἴδιον αὐ-  
τῆς· τοῦτο γὰρ λαβεῖν μὲν ἀναγκαῖον, οὐ ράδιον δέ. φαίνε- <sup>5</sup>  
ται δὲ τῶν μὲν πλείστων οὐθέν ἄνευ τοῦ σώματος πάσχειν οὐδὲ  
ποιεῖν, οἷον ὀργίζεσθαι, θαρρεῖν, ἐπιθυμεῖν, ὅλως αἰσθάνεσθαι.  
μάλιστα δ' ἔοικεν ἴδιον τὸ νοεῖν· εἰ δ' ἐστὶ καὶ τοῦτο φαντασία  
τις ἢ μὴ ἄνευ φαντασίας, οὐκ ἐνδέχεται ἂν οὐδὲ τοῦτ' ἄνευ  
<sup>10</sup> σώματος εἶναι. εἰ μὲν οὖν ἐστὶ τι τῶν τῆς ψυχῆς ἔργων ἢ <sup>10</sup>  
παθημάτων ἴδιον, ἐνδέχεται ἂν αὐτὴν χωρίζεσθαι· εἰ δὲ μὴ-  
θέν ἐστίν ἴδιον αὐτῆς, οὐκ ἂν εἴη χωριστή, ἀλλὰ καθάπερ τῷ  
εὐθεῖ, ἣ εὐθύ, πολλὰ συμβαίνει, οἷον ἅπτεσθαι τῆς χαλ-  
κῆς σφαίρας κατὰ στιγμήν, οὐ μέντοι γ' ἄψεται οὕτω χωρι-  
σθὲν τὸ εὐθύ· ἀχώριστον γάρ, εἴπερ αἰετὰ μετὰ σώματός τι- <sup>15</sup>  
νός ἐστίν. ἔοικε δὲ καὶ τὰ τῆς ψυχῆς πάθη πάντα εἶναι με-  
τὰ σώματος, θυμός, πραότης, φόβος, ἔλεος, θάρσος, ἔτι  
χαρὰ καὶ τὸ φιλεῖν τε καὶ μισεῖν· ἅμα γὰρ τούτοις πά-  
σχει τι τὸ σῶμα. σημεῖον δὲ τὸ ποτὲ μὲν ἰσχυρῶν καὶ ἐν-  
αργῶν παθημάτων συμβαινόντων μὴδὲν παροξύνεσθαι ἢ φο- <sup>20</sup>  
βεῖσθαι, ἐνίοτε δ' ὑπὸ μικρῶν καὶ ἀμαυρῶν κινεῖσθαι, ὅταν  
ὀργᾷ τὸ σῶμα καὶ οὕτως ἔχῃ ὥσπερ ὅταν ὀργίζηται. ἔτι  
δὲ τοῦτο μᾶλλον φανερόν· μὴθενὸς γὰρ φοβεροῦ συμβαίνον-  
τος ἐν τοῖς πάθεσι γίνονται τοῖς τοῦ φοβουμένου. εἰ δ' οὕτως  
ἔχει, δῆλον ὅτι τὰ πάθη λόγοι ἐνυλοὶ εἰσιν. ὥστε οἱ ὄροι <sup>25</sup>

25. τι λέγειν T U V, τι insert. E<sub>2</sub> Simpl. Soph. || ὅτι κάλλιστα T V X y, τι κάλλιον W, κάλλιστα etiam Simpl. Philop. || γὰρ tuentur praeter omnes codd. Philop. Alex. apud Philop. Simpl. || 403 a, 6. δὲ om. E || τῶν μὲν E X y Philop. Soph. Torst., μὲν om. reliqui ante Torst. omnes || ἄνευ τοῦ σώμ. E Philop. Soph. Torst., τοῦ om. reliqui ante Torst. omnes || 8. ἴδιον S W X y, Simpl. Philop. Trend. ed. pr., ἴδιον etiam E, sed on in ras., ω superscr. (Bhl.), ἴδιον etiam Them. Soph. || 9. ἄνευ τοῦ σώμ. W y et, ut videtur, Philop. 46, 5, τοῦ om. etiam Them. Simpl. Soph. || 13. ἢ εὐθεῖ W et E<sub>2</sub>, ἢ εὐθύ E<sub>1</sub> (Stapf.) || 14. οὕτω solus E et Bonitz (Hermes VII, 417), reliqui ante Biehlium omnes τούτου, etiam Philop. Simpl. et, ut videtur, Soph. 7, 28 || 18. καὶ τὸ μισεῖν S W X || γὰρ et 19. τι om. E, leg. Soph. || ἅμα...19. σῶμα unc. incl. Torst., tuentur haec verba praeter codd. Simpl. Philop.,

For when we are able to give an account of all, or at any rate most, of the attributes as they are presented to us, then we shall be in a position to define most exactly the essential nature of the thing. In fact, the starting point of every demonstration is a definition of what something is. Hence the definitions which lead to no information about attributes and do not facilitate even conjecture respecting them have clearly been framed for dialectic and are void of content, one and all.

A further difficulty arises as to whether all attributes of the 9  
 Soul and soul are also shared by that which contains the soul or  
 body. whether any of them are peculiar to the soul itself: a  
 question which it is indispensable, and yet by no means easy, to  
 decide. It would appear that in most cases soul neither acts nor is  
 acted upon apart from the body: as, e.g., in anger, confidence, desire  
 and sensation in general. Thought, if anything, would seem to be  
 peculiar to the soul. Yet, if thought is a sort of imagination, or  
 not independent of imagination, it will follow that even thought  
 cannot be independent of the body. If, then, there be any of the 10  
 functions or affections of the soul peculiar to it, it will be possible  
 for the soul to be separated from the body: if, on the other hand,  
 there is nothing of the sort peculiar to it, the soul will not be  
 capable of separate existence. As with the straight line, so with  
 it. The line, *quâ* straight, has many properties; for instance, it  
 touches the brazen sphere at a point; but it by no means follows  
 that it will so touch it if separated. In fact it is inseparable, since  
 it is always conjoined with body of some sort. So, too, the  
 attributes of the soul appear to be all conjoined with body: such  
 attributes, viz., as anger, mildness, fear, pity, courage; also joy,  
 love and hate; all of which are attended by some particular  
 affection of the body. This indeed is shown by the fact that some-  
 times violent and palpable incentives occur without producing in  
 us exasperation or fear, while at other times we are moved by  
 slight and scarcely perceptible causes, when the blood is up and  
 the bodily condition that of anger. Still more is this evident from  
 the fact that sometimes even without the occurrence of anything  
 terrible men exhibit all the symptoms of terror. If this be so,  
 the attributes are evidently forms or notions realised in matter.

e.g. 50, 22, Soph. || 19. σημείον E Torst., μηνύει reliqui ante Torst. omnes, etiam Them. Soph. || μὲν ὑπὸ λογ. T U V W X Soph. || 21. δ' δὲ καὶ U V W Y, om. καὶ etiam Them. Soph. || εἰαν S T V W X Soph., όταν etiam Simpl. || 23. μᾶλλον τοῦτο S T V W X Y, τοῦτου μᾶλλον conl. Torst., τοῦτω conl. Christ || 25. ὅτι καὶ τὰ U V y || ἐν ὅλῃ E T, ἐνυλοὶ etiam Them. Philop. Soph.

τοιοῦτοι οἶον τὸ ὀργίζεσθαι κίνησίς τις τοῦ τοιουδὶ σώματος ἢ  
 II μέρους ἢ δυνάμεως ὑπὸ τοῦδε ἔνεκα τοῦδε. καὶ διὰ ταῦτα ἤδη  
 φυσικοῦ τὸ θεωρῆσαι περὶ ψυχῆς, ἢ πάσης ἢ τῆς τοιαύτης.  
 διαφερόντως δ' ἂν ὀρίσαιντο φυσικός τε καὶ διαλεκτικός  
 ἕκαστον αὐτῶν, οἶον ὀργὴ τί ἐστίν· ὁ μὲν γὰρ ὀρεξίν ἀντιλυ- 30  
 πήσεως ἢ τι τοιοῦτον, ὁ δὲ ζέσιν τοῦ περὶ καρδίαν αἵματος  
 ἢ θερμοῦ. τούτων δὲ ὁ μὲν τὴν ὕλην ἀποδίδωσιν, ὁ δὲ τὸ 403b  
 εἶδος καὶ τὸν λόγον. ὁ μὲν γὰρ λόγος εἶδος τοῦ πράγματος,  
 ἀνάγκη δ' εἶναι τοῦτον ἐν ὕλῃ τοιαδί, εἰ ἔσται· ὥσπερ οἰκίας  
 ὁ μὲν λόγος τοιοῦτος, ὅτι σκέπασμα κωλυτικὸν φθορᾶς ὑπ'  
 ἀνέμων καὶ ὀμβρων καὶ καυμάτων, ὁ δὲ φήσει λίθους καὶ 5  
 πλίνθους καὶ ξύλα, ἕτερος δ' ἐν τούτοις τὸ εἶδος ἔνεκα των-  
 δί. τίς οὖν ὁ φυσικός τούτων; πότερον ὁ περὶ τὴν ὕλην, τὸν δὲ  
 λόγον ἀγνοῶν, ἢ ὁ περὶ τὸν λόγον μόνον; ἢ μᾶλλον ὁ ἐξ  
 ἀμφοῖν. ἐκείνων δὲ δὴ τίς ἐκάτερος; ἢ οὐκ ἔστι τις ὁ περὶ  
 τὰ πάθη τῆς ὕλης τὰ μὴ χωριστὰ μὴδ' ἢ χωριστά, ἀλλ' 10  
 ὁ φυσικός περὶ ἅπανθ' ὅσα τοῦ τοιουδὶ σώματος καὶ τῆς τοι-  
 αύτης ὕλης ἔργα καὶ πάθη· ὅσα δὲ μὴ ἢ τοιαῦτα, ἄλ-  
 λος, καὶ περὶ τινῶν μὲν τεχνίτης, ἐὰν τύχη, οἶον τέκτων ἢ  
 ἱατρός, τῶν δὲ μὴ χωριστῶν μὲν, ἢ δὲ μὴ τοιούτου σώμα-  
 τος πάθη καὶ ἐξ ἀφαιρέσεως, ὁ μαθηματικός, ἢ δὲ κεχωρι- 15  
 σμένα, ὁ πρῶτος φιλόσοφος. ἀλλ' ἐπανιτέον ὅθεν ὁ λόγος.  
 ἐλέγομεν δ' ὅτι τὰ πάθη τῆς ψυχῆς ἀχώριστα τῆς φυσικῆς  
 ὕλης τῶν ζώων, ἢ δὴ τοιαῦθ' ὑπάρχει, θυμὸς καὶ φόβος,  
 καὶ οὐχ ὥσπερ γραμμὴ καὶ ἐπίπεδον.

26. κίνησιν E κίνησις etiam Simpl. Philop. Soph. Cf. ad 402 a, 15 || τις om. ES Soph.,  
 τις leg. etiam Simpl. Philop. || 27. ἤδη] δὴ S T V W y, om. X || 29. ὀρίσαιντο φ. V, ὀρίσαιτο  
 ὁ φ. S T U W X y Soph. || καὶ ὁ διαλεκτικός W y, ὁ om. etiam Soph. || 31. τοιοῦτο S T U V W,  
 τοιοῦτον etiam Soph. || verba αἵματος καὶ (vel ἢ) removenda esse censet Steinhart, Synb.  
 Crit. 1843 || 403 b, 1. ἢ] καὶ F. Bek. Torst., ἢ etiam Philop. Soph. Trend. || 2. εἶδος τοῦ]  
 εἶδος mihi suspectum, ὅδε τοῦ W et, ut videtur, Soph. 8, 35, fortasse recte, ὁ δὲ τοῦ  
 E S T V y Simpl. Philop. Plutarchus ap. Simpl. 21, 35 || 3. εἶναι τοιοῦτον V, τοῦτον  
 εἶναι W || ἐπὶ οἰκίας W y || 4. ὅτι] τις S, τις ὅτι X, ἂν εἴη T W, ἂν εἴη ὅτι U V ||  
 5. καυμάτων καὶ ὀμβρων W X, ὀμβρων καὶ πνευμάτων E, textum tuentur etiam Them.  
 Philop. Soph. || φησι S V X y || καὶ πλ.] καὶ om. V || 6. ἐν om. W || 9. post ἀμφοῖν  
 interrogandi signum Bek., correxit Trend. || δὴ om. U V || 10. post μὴ χωριστὰ  
 virgulam Bek. et Trend., sustulit Torst. || 11. πάνθ' T, ἅπανθ' etiam E, sed a  
 eras. (Stapf.) || τοῦ om. S U W || τοιουδὶ] φυσικοῦ T || 12. ὅσα E Philop. Torst., reliqui  
 ante Torst. omnes ὅποσα || ἢν E, sed ν expunct. (Stapf.), ἢ Simpl. Bon. (Metaph. p. 284)  
 Torst., omisisse videtur Philop. in interpr. 62, 16, reliqui ante Torst. omnes ἢ || 13. τινος  
 T, τινὰ U W y, τινῶν etiam Simpl. Philop. Soph. || 15. ὁ om. E, leg. etiam Soph. ||

Hence they must be defined accordingly: anger, for instance, as a certain movement in a body of a given kind, or some part or faculty of it, produced by such and such a cause and for such and such an end. These facts at once bring the investigation of soul, **11**

**Digres-** whether in its entirety or in the particular aspect  
**sion.** described, within the province of the natural philosopher.

But every such attribute would be differently defined by the physicist and the dialectician or philosopher. Anger, for instance, would be defined by the dialectician as desire for retaliation or the like, by the physicist as a ferment of the blood or heat which is about the heart: the one of them gives the matter, the other the form or notion. For the notion is the form of the thing, but this notion, if it is to be, must be realised in matter of a particular kind; just as in the case of a house. The notion or definition of a house would be as follows: a shelter to protect us from harm by wind or rain or scorching heat; while another will describe it as stones, bricks and timber; and again another as the form realised in these materials and subserving given ends. Which then of these is the true physicist? Is it he who confines himself to the matter, while ignoring the form? Or he who treats of the form exclusively? I answer, it is rather he who in his definition takes account of both. What then of each of the other two? Or shall we rather say that there is no one who deals with properties which are not separable nor yet treated as separable, but the physicist deals with all the active properties or passive affections belonging to body of a given sort and the corresponding matter? All attributes not regarded as so belonging he leaves to someone else: who in certain cases is an expert, a carpenter, for instance, or a physician. The attributes which, though inseparable, are not regarded as properties of body of a given sort, but are reached by abstraction, fall within the province of the mathematician: while attributes which are regarded as having separate existence fall to the first philosopher or metaphysician. But to return to the point of digression. We were saying that the

**Conclu-** attributes of the soul are as such,—I mean, as anger and  
**sion.** fear, inseparable from the physical matter of the animals to which they belong, and not, like line and surface, separable in thought.

17. *ὅτι ὡς χωριστὰ* ex solo E Biehl Rodier, quasi 19. *καὶ οὐχ* huic *ὅτι* respondeat, sed aut <*ὅτι χωριστὰ*> *ὅτι* aut *οὐδὲ* pro *ὅτι* minus incommodi haberet, *χωριστὰ* TVX, *ὁ χωριστὰ* Soph. Torst. Dembowski, Woch. f. class. Phil. 1887, p. 430, reliqui *ἀχώριστα*, etiam Them. Philop. Simpl. || 18. *ἢ δὴ* || *ἢ γε* U Simpl., *εἰ γε* T, *ἢ* X, *ἢ δὴ* etiam Philop. Soph. || *τοιούτη* X.

2 Ἐπισκοποῦντας δὲ περὶ ψυχῆς ἀναγκαῖον ἅμα διαπο- 20  
 ροῦντας περὶ ὧν εὐπορεῖν δεῖ προελθόντας, τὰς τῶν προτέρων  
 δόξας συμπαραλαμβάνειν ὅσοι τι περὶ αὐτῆς ἀπεφάναντο,  
 ὅπως τὰ μὲν καλῶς εἰρημένα λάβωμεν, εἰ δέ τι μὴ κα-  
 2 λῶς, τοῦτ' εὐλαβηθῶμεν. ἀρχὴ δὲ τῆς ζητήσεως προθέσθαι  
 τὰ μάλιστα δοκοῦνθ' ὑπάρχειν αὐτῇ κατὰ φύσιν. τὸ ἔμψυ- 25  
 χον δὴ τοῦ ἀψύχου δυοῖν μάλιστα διαφέρειν δοκεῖ, κινήσει  
 τε καὶ τῷ αἰσθάνεσθαι. παρειλήφαμεν δὲ καὶ παρὰ τῶν προ-  
 γενεστέρων σχεδὸν δύο ταῦτα περὶ ψυχῆς· φασὶ γὰρ ἔνιοι  
 καὶ μάλιστα καὶ πρώτως ψυχὴν εἶναι τὸ κινεῖν. οἰθθέντες δὲ  
 τὸ μὴ κινούμενον αὐτὸ μὴ ἐνδέχεσθαι κινεῖν ἕτερον, τῶν 30  
 3 κινουμένων τι τὴν ψυχὴν ὑπέλαβον εἶναι. ὅθεν Δημόκριτος μὲν  
 πῦρ τι καὶ θερμόν φησιν αὐτὴν εἶναι· ἀπείρων γὰρ ὄντων 404a  
 σχημάτων καὶ ἀτόμων τὰ σφαιροειδῇ πῦρ καὶ ψυχὴν λέ-  
 γει, οἷον ἐν τῷ ἀέρι τὰ καλούμενα ξύσματα, ἃ φαίνεται ἐν  
 ταῖς διὰ τῶν θυρίδων ἀκτίσιν, ὧν τὴν μὲν πανσπερμίαν  
 τῆς ὅλης φύσεως στοιχεῖα λέγει· ὁμοίως δὲ καὶ Λεύκιππος· τού- 5  
 των δὲ τὰ σφαιροειδῇ ψυχὴν, διὰ τὸ μάλιστα διὰ παντὸς δύ-  
 νασθαι διαδύνειν τοὺς τοιούτους ῥυσμοὺς καὶ κινεῖν τὰ λοιπὰ  
 κινούμενα καὶ αὐτά, ὑπολαμβάνοντες τὴν ψυχὴν εἶναι τὸ  
 παρέχον τοῖς ζῷοις τὴν κίνησιν. διὸ καὶ τοῦ ζῆν ὄρον εἶναι  
 τὴν ἀναπνοήν· συνάγοντος γὰρ τοῦ περιέχοντος τὰ σώματα 10  
 καὶ ἐκθλίβοντος τῶν σχημάτων τὰ παρέχοντα τοῖς ζῷοις  
 τὴν κίνησιν διὰ τὸ μὴδ' αὐτὰ ἡρεμεῖν μηδέποτε, βοήθειαν  
 γίνεσθαι θύραθεν ἐπεισιόντων ἄλλων τοιούτων ἐν τῷ ἀναπνεῖν·  
 κωλύειν γὰρ αὐτὰ καὶ τὰ ἐνυπάρχοντα ἐν τοῖς ζῷοις ἐκ-  
 κρίνεσθαι, συνανείργοντα τὸ συνάγον καὶ πηγνύον· καὶ ζῆν 15  
 4 δὲ ἕως ἄν δύνωνται τοῦτο ποιεῖν. εἰοικε δὲ καὶ τὸ παρὰ τῶν  
 Πυθαγορείων λεγόμενον τὴν αὐτὴν ἔχειν διάνοιαν· ἔφασαν  
 γάρ τινες αὐτῶν ψυχὴν εἶναι τὰ ἐν τῷ ἀέρι ξύσματα, οἱ

20. δὲ πάλιν περὶ S || 21. προδιελθόντας S Philop. Soph., διελθόντας X et pr. T, ante προελθόντας virgulam ponunt Bek. Trend. || 22. συμπαραλαμβάνειν T W X, διαλαμβάνειν V, συμπαραλαμβάνειν etiam Them. Philop. Soph. || 23. καλῶς om. T, post εἰρημένα ponit U || 24. τοῦτ' ἀληθῆ θῶμεν S || 26. δυεῖν E, δυοῖ S V W X || μάλιστα ante δυοῖ W || δοκεῖ διαφέρειν X || 28. φασὶ φασὶ μὲν V || ἔνιοι γὰρ W || 29. πρώτων E T, πρώτως etiam Philop. Simpl. Soph. || 30. μὴδ' ἐνδ. V y || 31. ψυχὴν οὕτως ὑπ. U y || Δημ. μὲν] καὶ Δημ. V || 404 a, 1. αὐτὴν φησιν T W || 2. τὰ σφαιρ...λέγει et 4. ὧν delenda et 5. ὁμοίως...Λεύκιππος parenth. includenda censet Madvig, adversaria critica I, p. 471,



In our enquiry concerning soul it is necessary to state the 2 problems which must be solved as we proceed, and at the same time to collect the views of our predecessors who had anything to say on the subject, in order that we may adopt what is right in their conclusions and guard against their mistakes. Our enquiry will begin by presenting what are 2 commonly held to be in a special degree the natural attributes of soul. Now there are two points especially wherein that which is animate is held to differ from the inanimate, namely, motion and the act of sensation: and these are approximately the two characteristics of soul handed down to us by our predecessors. There are some who maintain that soul is preeminently and primarily the cause of movement. But they imagined that that which is not itself in motion cannot move anything else, and thus they regarded the soul as a thing which is in motion. Hence Democritus affirms the soul to be a sort of fire or 3 heat. For the "shapes" or atoms are infinite and those which are spherical he declares to be fire and soul: they may be compared with the so-called motes in the air, which are seen in the sunbeams that enter through our windows. The aggregate of such seeds, he tells us, forms the constituent elements of the whole of nature (and herein he agrees with Leucippus), while those of them which are spherical form the soul, because such figures most easily find their way through everything and, being themselves in motion, set other things in motion. The atomists assume that it is the soul which imparts motion to animals. It is for this reason that they make life depend upon respiration. For, when the surrounding air presses upon bodies and tends to extrude those atomic shapes which, because they are never at rest themselves, impart motion to animals, then they are reinforced from outside by the entry of other like atoms in respiration, which in fact, by helping to check compression and solidification, prevent the escape of the atoms already contained in the animals; and life, so they hold, continues so long as there is strength to do this. The doctrine of the Pythagoreans seems also to contain the 4 same thought. Some of them identified soul with the motes in the air, others with that which sets these motes

The  
current  
theories.

Soul  
moved  
because  
movent.

The  
atomists.

Certain  
Pytha-  
goraeans.

der Vorsokratiker, p. 363, 7 || 4. τὴν μὲν πανσπ. E (Trend.), Them. Torst., μὲν om. reliqui ante Torst. omnes, etiam Philop. Soph. || 5. στοιχεῖα λέγει τῆς ὅλης φύσεως excepto E omnes codd., etiam Them. Soph. Bek. Trend. || 6. σφαῖρ. πῦρ καὶ ψυχὴν V || 9. διδ... 12. κίνησιν om. V || 10. τὴν εἰσπνοὴν καὶ τὴν ἀναπνοήν S. || 13. οὐρανόθεν T || εἴτ' εἰσιόντων E, ἐπεισιόντων etiam Them. Soph. et sine dubio Philop. et Simpl.

δὲ τὸ ταῦτα κινοῦν. περὶ δὲ τούτων εἴρηται διότι συνεχῶς φαίνεται κινούμενα, κὰν ἡ νηνεμία παντελής. ἐπὶ ταῦτ' οὖν δὲ 20 φέρονται καὶ ὅσοι λέγουσι τὴν ψυχὴν τὸ αὐτὸ κινοῦν· εἰ-  
 κασι γὰρ οὗτοι πάντες ὑπειληφέναι τὴν κίνησιν οἰκειότατον εἶναι τῇ ψυχῇ, καὶ τὰ μὲν ἄλλα πάντα κινεῖσθαι διὰ τὴν ψυχὴν, ταύτην δ' ὑφ' ἑαυτῆς, διὰ τὸ μηθὲν ὁρᾶν κινοῦν δ  
 5 μὴ καὶ αὐτὸ κινεῖται. ὁμοίως δὲ καὶ Ἀναξαγόρας ψυχὴν 25 εἶναι λέγει τὴν κινουσαν, καὶ εἴ τις ἄλλος εἴρηκεν, ὥς τὸ πᾶν ἐκίνησε νοῦς, οὐ μὴν παντελῶς γ' ὥσπερ Δημόκριτος· ἐκείνος μὲν γὰρ ἀπλῶς ψυχὴν ταῦτον καὶ νοῦν· τὸ γὰρ ἀληθὲς εἶ-  
 ναι τὸ φαινόμενον· διὸ καλῶς ποιῆσαι τὸν Ὀμηρον ὥς Ἔκτωρ κεῖτ' ἄλλοφρονέων. οὐ δὲ χρῆται τῷ νῷ ὥς δυνάμει 30  
 τινὶ περὶ τὴν ἀλήθειαν, ἀλλὰ ταῦτ' οὖν λέγει ψυχὴν καὶ νοῦν. Ἀναξαγόρας δ' ἥττον διασαφεῖ περὶ αὐτῶν· πολλαχού μὲν 40a  
 γὰρ τὸ αἴτιον τοῦ καλῶς καὶ ὀρθῶς τὸν νοῦν λέγει, ἐτέρωθι δὲ τοῦτον εἶναι τὴν ψυχὴν· ἐν ᾧ πασι γὰρ ὑπάρχειν αὐτὸν τοῖς ζώοις καὶ μεγάλοις καὶ μικροῖς καὶ τιμίοις καὶ ἀτιμο-  
 τέροις. οὐ φαίνεται δ' ὅ γε κατὰ φρόνησιν λεγόμενος νοῦς πᾶσιν 5 ὁμοίως ὑπάρχειν τοῖς ζώοις, ἀλλ' οὐδὲ τοῖς ἀνθρώποις πᾶσιν.  
 6 ὅσοι μὲν οὖν ἐπὶ τὸ κινεῖσθαι τὸ ἐμψυχον ἀπέβλε-  
 ψαν, οὗτοι τὸ κινήτικώτατον ὑπέλαβον τὴν ψυχὴν· ὅσοι δ' ἐπὶ τὸ γινώσκειν καὶ τὸ αἰσθάνεσθαι τῶν ὄντων, οὗτοι δὲ λέ-  
 γουσι τὴν ψυχὴν τὰς ἀρχάς, οἱ μὲν πλείους ποιοῦντες [ταύτας], 10 οἱ δὲ μίαν ταύτην, ὥσπερ Ἐμπεδοκλῆς μὲν ἐκ τῶν στοιχείων πάντων, εἶναι δὲ καὶ ἕκαστον ψυχὴν τούτων, λέγων οὕτως

γαίῃ μὲν γὰρ γαῖαν ὀπώπαμεν, ὕδατι δ' ὕδωρ,  
 αἰθέρι δ' αἰθέρα διαν, ἀτὰρ πῦρ αἰθέλων,  
 στοργῇ δὲ στοργήν, νείκος δέ τε νείκει λυγρῷ.

15

verba 19. περὶ δὲ τούτων...20. παντελής Bichlio suspecta videntur; legit quidem ea Philop. 70, 35 sq. Soph. 11, 22 sq. Them. 9, 30 sq., qui tamen verba περὶ δὲ τούτων εἶρηται praeterit, de Simpl. 26, 13 sqq. non liquet || 19. virgulam post εἴρηται sustulit Rodier || 21. S, in interpr. εἴρηται δὲ αὐτοῖς τοῦτο, ἐπεὶ Soph. || 21. εαυτὸ STVWX || 24. αὐτῆς E, ὑφ' ἑαυτῆς etiam Them. || 26. virgulam post εἴρηκεν posuit Diels || 27. ὁ νοῦς SWX y, ὁ om. etiam Them. Soph. || post Δημ. colon Diels, vulg. punctum || 28. ψυχὴν ταῦτον καὶ νοῦν ex solo E (Trend.) Biehl, reliqui ante Bichlium omnes ταῦτον ψυχὴν καὶ νοῦν || 40a b, 1. πολλαχῇ E, πολλαχῶς W, πολλαχού etiam Them. qui in interpr. 10, 5 sq. πολλαχού posuit || 2. τὸ om. V y, legit etiam Them. || 3. ταῦτον εἶναι τὸν νοῦν τῇ ψυχῇ V, τὸν νοῦν εἶναι ταῦτον τῇ ψυχῇ T W et, qui τὸν αὐτὸν, U y, similia veteres interpretes || 4. vulg. virgulas post ζώοις et μικροῖς

in motion: and as to these motives it has been stated that they are seen to be in incessant motion, even though there be a perfect calm. The view of others who describe the soul as that which moves itself tends in the same direction. For it would seem that all these thinkers regard motion as the most distinctive characteristic of the soul. Everything else, they think, is moved by the soul, but the soul is moved by itself: and this because they never see anything cause motion without itself being in motion. Similarly the soul is said to <sup>5</sup> be the moving principle by Anaxagoras and all others who have held

**Anaxa-  
goras.** that mind sets the universe in motion; but not altogether in the same sense as by Democritus. The latter, indeed, absolutely identified soul and mind, holding that the presentation to the senses is the truth: hence, he observed, Homer had well sung of Hector in his swoon that he lay 'with other thoughts.' Democritus, then, does not use the term mind to denote a faculty conversant with truth, but regards mind as identical with soul. Anaxagoras, however, is less exact in his use of the terms. In many places he speaks of mind as the cause of goodness and order, but elsewhere he identifies it with the soul: as where he attributes it to all animals, both great and small, high and low. As a matter of fact, however, mind in the sense of intelligence would not seem to be present in all animals alike, nor even in all men.

Those, then, who have directed their attention to the motion of <sup>6</sup> the animate being, conceived the soul as that which is most capable of causing motion: while those who laid stress on its knowledge and perception of all that exists identified the soul with the ultimate principles, whether they recognised a plurality of these or only one. Thus Empedocles compounded soul out of all the elements, while at the same time regarding each one of them as a soul. His words are "With earth we see earth, with water water, with air bright air, but ravaging fire by fire, love by love, and strife by

sustulit Diels || *δριμοτίποις* E (Stapf.) || 5. *φαίνεται νῦν δὲ* E (νῦν in rasura, Trend.) || 6. *πᾶσι* om. STWX || 9. *τὸ post καὶ* om. STVWY, leg. etiam Them. Soph. || *δὴ* U Them., om. VW || 10. *ποιούντες ταύτας οἱ* VW et vet. transl. Biehl Rodier, *ποιούντες αὐτὰς οἱ* in lemma Philop. 72, 31 et in interpr. *οἱ μὲν πλείους εἰπόντες ἀρχὰς* 73, 13, *ποιούντες τὰς ἀρχὰς οἱ* TU, et Philop. v. l. 72, 31, *ποιούντες τὰς ἀρχὰς ταύτας οἱ* SXY et in interpr. Them. Soph., *ποιούντες, οἱ* E Bek. Trend. Torst. *ταύτας* unc. includere malui, delendum censet etiam Dombrowski, p. 431, om. Diels, p. 213, Fr. 109 || ante *ταύτας* et 11. *ταύτην* virgulas posuit Rodier || 11. *μὲν* om. STW || 12. *οὕτως* E (Trend.), *οὕτω λέγων* SU, om. TW, vulgo ante Biehlum *οὕτω* || 13. *δ'* insertum E, leg. etiam Them. Soph. || 14. *δῖον* TUVW, etiam Soph.

7 τὸν αὐτὸν δὲ τρόπον καὶ ὁ Πλάτων ἐν τῷ Τιμαίῳ τὴν ψυ-  
 χὴν ἐκ τῶν στοιχείων ποιεῖ· γινώσκεσθαι γὰρ τῷ ὁμοίῳ τὸ  
 ὅμοιον, τὰ δὲ πράγματα ἐκ τῶν ἀρχῶν εἶναι. ὁμοίως δὲ  
 καὶ ἐν τοῖς περὶ φιλοσοφίας λεγομένοις διωρίσθη, αὐτὸ μὲν  
 τὸ ζῶον ἐξ αὐτῆς τῆς τοῦ ἐνὸς ιδέας καὶ τοῦ πρώτου μήκους 20  
 καὶ πλάτους καὶ βάθους, τὰ δ' ἄλλα ὁμοιοτρόπως. ἔτι δὲ  
 καὶ ἄλλως, νοῦν μὲν τὸ ἔν, ἐπιστήμην δὲ τὰ δύο· μοναχῶς  
 γὰρ ἐφ' ἑν· τὸν δὲ τοῦ ἐπιπέδου ἀριθμὸν δόξαν, αἰσθησιν δὲ  
 τὸν τοῦ στερεοῦ· οἱ μὲν γὰρ ἀριθμοὶ τὰ εἶδη αὐτὰ καὶ αἱ ἀρ-  
 χαὶ ἐλέγοντο, εἰσὶ δ' ἐκ τῶν στοιχείων. κρίνεται δὲ τὰ πρά- 25  
 γματα τὰ μὲν νῶ, τὰ δ' ἐπιστήμη, τὰ δὲ δόξη, τὰ δ' αἰ-  
 8 σθήσει· εἶδη δ' οἱ ἀριθμοὶ οὗτοι τῶν πραγμάτων. ἐπεὶ δὲ καὶ  
 κινητικὸν ἐδόκει ἡ ψυχὴ εἶναι καὶ γνωριστικὸν οὕτως, ἔνιοι  
 συνέπλεξαν ἐξ ἀμφοῖν, ἀποφηνάμενοι τὴν ψυχὴν ἀριθμὸν  
 9 κινεῖνθ' ἑαυτόν. διαφέρονται δὲ περὶ τῶν ἀρχῶν, τίνες καὶ 30  
 πόσαι, μάλιστα μὲν οἱ σωματικὰς ποιοῦντες τοῖς ἀσωμάτους,  
 τούτοις δ' οἱ μείζαντες καὶ ἀπ' ἀμφοῖν τὰς ἀρχὰς ἀποψη- 405ε  
 10 νάμενοι. διαφέρονται δὲ καὶ περὶ τὸ πλῆθος· οἱ μὲν γὰρ  
 μίαν οἱ δὲ πλείους λέγουσιν. ἐπομένως δὲ τούτοις καὶ τὴν  
 ψυχὴν ἀποδιδόασιν· τό τε γὰρ κινητικὸν τὴν φύσιν τῶν πρώ-  
 11 των ὑπειλήφασιν, οὐκ ἀλόγως. ὅθεν ἐδοξέ τισι πῦρ εἶναι· 5  
 καὶ γὰρ τοῦτο λεπτομερέστατόν τε καὶ μάλιστα τῶν στοιχείων  
 ἀσώματον, ἔτι δὲ κινεῖται τε καὶ κινεῖ τὰ ἄλλα πρώτως.  
 12 Δημόκριτος δὲ καὶ γλαφυρωτέρως εἴρηκεν ἀποφαινόμενος  
 διὰ τί τούτων ἑκάτερον· ψυχὴν μὲν γὰρ εἶναι ταῦτό καὶ νοῦν,  
 τοῦτο δ' εἶναι τῶν πρώτων καὶ ἀδιαιρέτων σωμαίων, κινητι- 10  
 κὸν δὲ διὰ λεπτομέρειαν καὶ τὸ σχῆμα· τῶν δὲ σχημάτων

16. καὶ ὁ E, "et Plato" vet. transl., om. STUVWY, ὁ om. Bek. Trend. Torst. | Πλάτων post Τιμαίῳ UWY, post ψυχὴν ST || 21. τὰς δ' ἄλλας Them. et tanquam variam lectionem Philop. commemorat 79, 15, τὰ δὲ ἄλλα Simpl., τὰλλα δὲ Soph. || 23. ἐφ' ἑν | γίνεσθαι X, om. ST, leg. etiam Them. Soph. || 24. αὐτὰ om. SX, leg. Soph. | αἱ ante ἀρχαὶ ex uno E addunt Bek. et Torst., om. Soph. Trend. || 27. εἶδη δὲ καὶ ἀριθμοὶ com. Steinhart, οὗτοι καὶ coni. Susemihl, Jen. Lit. Z. 1877, p. 708 || 28. virgulam post οὕτως Torst. Belger in ed. alt. Trend. Rodier, etiam Soph. 14, 2, ante οὕτως reliqui, etiam Simpl. Philop. || 30. διαφέρονται...405b, 29. ψυχὴν non satis ad praecedentia quadrare videntur Susemihlio, Oecon. p. 84 || 31. τὰς ἀσωμάτους e cold. solus X, τοὺς ἀσωμάτους Them. Philop. Soph. Trend. Torst., ceteri codd. et Bek. τοὺς ἀσωμάτους || 405a, 2. τοῦ πλῆθους STVX || 4. τε om. ST || 7. ἐτι δὲ E<sub>1</sub>, sed eras., in ras. καὶ, καὶ etiam VX, ἐτι δὲ καὶ STW || τε om. STW || 8. ἀποφαινόμενος Torst. ex E, reliqui ante Torst. omnes ἀποφηνάμενος, etiam Soph. || 9. ψυχὴ E (Trend.) || ταῦτόν STVX || 10. εἶναι ἐκ τῶν TUVWX || 11. λεπτομέρειαν T et nunc E, sed λεπτο in ras. (Stapf.), "subtilitatem"

gruesome strife." In the same manner Plato in the *Timaeus* con- 7  
 structs the soul out of the elements. Like, he there  
 Plato. maintains, is known by like, and the things we know are  
 composed of the ultimate principles. In like manner it was  
 explained in the lectures on philosophy, that the self-animal or  
 universe is made up of the idea of One, and of the idea-numbers  
 Two, or primary length, Three, primary breadth, and Four, primary  
 depth, and similarly with all the rest of the ideas. And again this  
 has been put in another way as follows: reason is the One, know-  
 ledge is the Two, because it proceeds by a single road to one  
 conclusion, opinion is the number of a surface, Three, and sensation  
 the number of a solid, Four. In fact, according to them the  
 numbers, though they are the ideas themselves, or the ultimate  
 principles, are nevertheless derived from elements. And things  
 are judged, some by reason, others by knowledge, others again  
 by opinion and others by sensation: while these idea-numbers  
 are forms of things. And since the soul was held to be thus 8  
 cognitive as well as capable of causing motion, some  
 thinkers have combined the two and defined the soul as a  
 self-moving number.

But there are differences of opinion as to the nature and number of 9  
 the ultimate principles, especially between those thinkers  
 Various theories of elements: corre- sponding theories of soul.  
 who make the principles corporeal and those who make  
 them incorporeal; and again between both of these and  
 others who combine the two and take their principles  
 from both. But, further, they differ also as to their 10  
 number: some assuming a single principle, some a plurality. And,  
 when they come to give an account of the soul, they do so in strict  
 accordance with their several views. For they have assumed, not  
 unnaturally, that the soul is that primary cause which in its own  
 nature is capable of producing motion. And this is why some 11  
 identified soul with fire, this being the element which is made up of  
 the finest particles and is most nearly incorporeal, while further it  
 is preeminently an element which both moves and sets other things  
 in motion. Democritus has expressed more neatly the reason for 12  
 each of these facts. Soul he regards as identical with mind, and  
 this he makes to consist of the primary indivisible bodies and  
 considers it to be a cause of motion from the fineness of its particles  
 and their shape. Now the shape which is most susceptible of

vet. transl. Torst., cui assentitur etiam Noetel, Zeitschr. f. Gym. 1864, p. 141, μικρο-  
 λεπτομέρειαν S, μικρομέρειαν rc. E et reliqui codd. Diels, p. 386, 33, quod rasurae subfuisse  
 coni. Stapfer, Studia, p. 13, etiam Philop. Soph., σμικρομέρειαν Them.

εὐκίνητοτάτον τὸ σφαιροειδὲς λέγει· τοιοῦτον δ' εἶναι τὸν τε  
 13 νοῦν καὶ τὸ πῦρ. Ἀναξαγόρας δ' ἔοικε μὲν ἕτερον λέγειν ψυ-  
 χήν τε καὶ νοῦν, ὥσπερ εἶπομεν καὶ πρότερον, χρήται δ'  
 ἀμφοῖν ὡς μιᾷ φύσει, πλὴν ἀρχήν γε τὸν νοῦν τίθεται μά- 15  
 λιστα πάντων· μόνον γοῦν φησὶν αὐτὸν τῶν ὄντων ἀπλοῦν εἶναι  
 καὶ ἀμιγῇ τε καὶ καθαρὸν. ἀποδίδωσι δ' ἄμφω τῇ αὐτῇ  
 ἀρχῇ, τό τε γινώσκειν καὶ τὸ κινεῖν, λέγων νοῦν κινήσαι τὸ  
 14 πᾶν. ἔοικε δὲ καὶ Θαλῆς, ἐξ ᾧ ἀπομνημονεύουσι, κινητικόν  
 τι τὴν ψυχὴν ὑπολαβεῖν, εἶπερ τὸν λίθον ἔφη ψυχὴν ἔχειν, 20  
 15 ὅτι τὸν σίδηρον κινεῖ. Διογένης δ' ὥσπερ καὶ ἕτεροί τινες  
 ἀέρα, τοῦτον οἰηθεὶς πάντων λεπτομερέστατον εἶναι καὶ ἀρχήν·  
 καὶ διὰ τοῦτο γινώσκειν τε καὶ κινεῖν τὴν ψυχὴν, ἥ μὲν πρῶ-  
 τὸν ἐστὶ, καὶ ἐκ τούτου τὰ λοιπά, γινώσκειν, ἥ δὲ λεπτότατον,  
 16 κινητικὸν εἶναι. καὶ Ἡράκλειτος δὲ τὴν ἀρχὴν εἶναί φησι 25  
 ψυχὴν, εἶπερ τὴν ἀναθυμίασιν, ἐξ ἧς τὰλλα συνίστησιν· καὶ  
 ἀσωματώτατόν τε καὶ ῥέον αἰεὶ· τὸ δὲ κινούμενον κινουμένῳ  
 γινώσκεσθαι. ἐν κινήσει δ' εἶναι τὰ ὄντα καὶ κείνος ᾧετο καὶ  
 17 οἱ πολλοί. παραπλησίως δὲ τούτοις καὶ Ἀλκμαίων ἔοικεν  
 ὑπολαβεῖν περὶ ψυχῆς· φησὶ γὰρ αὐτὴν ἀθάνατον εἶναι 30  
 διὰ τὸ εἰσθάναι τοῖς ἀθανάτοις· τοῦτο δ' ὑπάρχειν αὐτῇ ὡς  
 αἰεὶ κινουμένη· κινεῖσθαι γὰρ καὶ τὰ θεῖα πάντα συνεχῶς  
 18 αἰεὶ, σελήνην, ἥλιον, τοὺς ἀστέρας καὶ τὸν οὐρανὸν ὅλον. τῶν δὲ 405 b  
 φορτικωτέρων καὶ ὕδωρ τινὲς ἀπεφήναντο, καθάπερ Ἴππων·  
 πεισθῆναι δ' εἰκόασιν ἐκ τῆς γονῆς, ὅτι πάντων ὑγρά· καὶ  
 γὰρ ἐλέγχει τοὺς αἵμα φάσκοντας τὴν ψυχὴν, ὅτι ἡ γονὴ  
 19 οὐχ αἷμα· ταύτην δ' εἶναι τὴν πρώτην ψυχὴν. ἕτεροι δ' αἰ- 5  
 μα, καθάπερ Κριτίας, τὸ αἰσθάνεσθαι ψυχῆς οἰκειότατον  
 ὑπολαμβάνοντες, τοῦτο δ' ὑπάρχειν διὰ τὴν τοῦ αἵματος φύ-  
 σιν. πάντα γὰρ τὰ στοιχεῖα κριτὴν εἴληφε, πλὴν τῆς γῆς·

14. τε om. X || χρῆσθαι E X, χρήται etiam Simpl. || 16. πάντων S y Them.  
 Rodier, πάντων reliqui, etiam E (Stapf.) Simpl. Philop. || 17. τε om SV Wy ||  
 19. virgulam post Θαλῆς et post ἀπομν. posuit Diels || 20. ὑπολαμβάνειν T U V W y,  
 ἀπολαμβάνειν S, ὑπολαβεῖν etiam Them. || τὴν λίθον X Them. Simpl. Philop., τὸν etiam  
 Soph. || 24. λεπτομερέστατον T U V W || 25. φησι τὴν ψ. U W || 26. καὶ γὰρ ἀσ. T U ||  
 27. τε] δὲ S X Zeller Ph. d. Gr. I.<sup>6</sup> p. 646, adn. 3, δὲ T U Bek. Trend., om. V, τε  
 etiam Soph. et, ut videtur, Them. 13, 28, Torst. || 31. post ἀθανάτοις virgulam vulg.,  
 colon posuit Diels || 32. πάντα S T U V X || 405 b, 1. τοὺς om. U V W, leg. etiam  
 Them. Soph. || 2. post Ἴππων vulg. punctum, colon Diels || 3. post ὑγρά punctum Diels ||  
 5. τὴν om. S T, πρώτην om. W, πρώτῃν δὲ ψυχὴν (v.l. τὴν ψυχὴν) λέγει τὴν γονὴν Philop.

motion is the spherical ; and of atoms of this shape mind, like fire, consists. Anaxagoras, while apparently understanding by mind 13 something different from soul, as we remarked above, really treats both as a single nature, except that it is preeminently mind which he takes as his first principle ; he says at any rate that mind alone of things that exist is simple, unmixed, pure. But he refers both knowledge and motion to the same principle, when he says that mind sets the universe in motion. Thales, too, apparently, 14

**Thales.** judging from the anecdotes related of him, conceived soul as a cause of motion, if it be true that he affirmed the loadstone to possess soul, because it attracts iron. Diogenes, 15

however, as also some others, identified soul with air. **Diogenes.** Air, they thought, is made up of the finest particles and is the first principle : and this explains the fact that the soul knows and is a cause of motion, knowing by virtue of being the primary element from which all else is derived, and causing motion by the extreme fineness of its parts. Heraclitus takes soul for his first 16

**Heraclitus.** principle, as he identifies it with the vapour from which he derives all other things, and further says that it is the least corporeal of things and in ceaseless flux ; and that it is by something in motion that what is in motion is known ; for he, like most philosophers, conceived all that exists to be in motion. Alcmaeon, too, seems to have had a similar conception. For soul, 17

**Alcmaeon.** he maintains, is immortal because it is like the beings which are immortal ; and it has this attribute in virtue of being ever in motion : for he attributes continuous and unending motion to everything which is divine, moon, sun, stars and the whole heaven. Among cruder thinkers there have been some, like 18 Hippon, who have even asserted the soul to be water. The reason

**Hippon.** for this view seems to have been the fact that in all animals the seed is moist : in fact, Hippon refutes those who make the soul to be blood by pointing out that the seed is not blood, and that this seed is the rudimentary soul. Others, again, 19 like Critias, maintain the soul to be blood, holding that it is sentience which is most distinctive of soul and that this **Critias.** is due to the nature of blood. Thus each of the four elements except earth has found its supporter. Earth, however,

ταύτην δ' οὐθεις ἀποπέφανται, πλὴν εἴ τις αὐτὴν εἴρηκεν ἐκ πάντων εἶναι τῶν στοιχείων ἢ πάντα.

10

20 ὀρίζονται δὲ πάντες τὴν ψυχὴν τρισὶν ὡς εἰπεῖν, κινήσει, αἰσθήσει, τῷ ἁσωματῷ· τούτων δ' ἕκαστον ἀνάγεται πρὸς τὰς ἀρχάς. διὸ καὶ οἱ τῷ γινώσκειν ὀριζόμενοι αὐτὴν ἢ στοιχεῖον ἢ ἐκ τῶν στοιχείων ποιοῦσι, λέγοντες παραπλησίως ἀλλήλοις, πλὴν ἐνός· φασὶ γὰρ γινώσκεισθαι τὸ ὅμοιον τῷ ὁμοίῳ· ἐπειδὴ γὰρ ἡ 15 ψυχὴ πάντα γινώσκει, συνιστᾶσιν αὐτὴν ἐκ πασῶν τῶν ἀρχῶν. ὅσοι μὲν οὖν μίαν τινὰ λέγουσιν αἰτίαν καὶ στοιχεῖον ἓν, καὶ τὴν ψυχὴν ἓν τιθέασιν, οἷον πῦρ ἢ ἀέρα· οἱ δὲ πλείους 22 λέγοντες τὰς ἀρχὰς καὶ τὴν ψυχὴν πλείω ποιοῦσιν. Ἀναξαγόρας δὲ μόνος ἀπαθῇ φησὶν εἶναι τὸν νοῦν, καὶ κοινὸν 20 οὐθέν οὐθενὶ τῶν ἄλλων ἔχειν. τοιοῦτος δ' ὦν πῶς γνωριεῖ καὶ διὰ τίν' αἰτίαν, οὐτ' ἐκεῖνος εἴρηκεν οὐτ' ἐκ τῶν εἰρημένων συμ- 23 φανές ἐστιν. ὅσοι δ' ἐναντιώσεις ποιοῦσιν ἐν ταῖς ἀρχαῖς, καὶ τὴν ψυχὴν ἐκ τῶν ἐναντίων συνιστᾶσιν· οἱ δὲ θάτερον τῶν ἐναντίων, οἷον θερμὸν ἢ ψυχρὸν ἢ τι τοιοῦτον ἄλλο, καὶ τὴν 25 ψυχὴν ὁμοίως ἐν τι τούτων τιθέασιν· διὸ καὶ τοῖς ὀνόμασιν ἀκολουθοῦσιν· οἱ μὲν γὰρ τὸ θερμὸν λέγοντες, ὅτι διὰ τοῦτο καὶ τὸ ζῆν ὠνόμασται, οἱ δὲ τὸ ψυχρὸν διὰ τὴν ἀναπνοὴν καὶ τὴν κατάψυξιν καλεῖσθαι ψυχὴν. τὰ μὲν οὖν παραδεδομένα περὶ ψυχῆς, καὶ δι' αὐτῆς αἰτίας λέγουσιν οὕτω, ταῦτ' ἐστίν.

30

3 Ἐπισκεπτέον δὲ πρῶτον μὲν περὶ κινήσεως· ἴσως γὰρ οὐ μόνον ψευδός ἐστι τὸ τὴν οὐσίαν αὐτῆς τοιαύτην εἶναι οἷαν φασὶν οἱ λέγοντες ψυχὴν εἶναι τὸ κινεῖν ἑαυτὸ ἢ δυνάμενον 406a κινεῖν, ἀλλ' ἐν τι τῶν ἀδυνάτων τὸ ὑπάρχειν αὐτῇ κίνησιν. 2 ὅτι μὲν οὖν οὐκ ἀναγκαῖον τὸ κινεῖν καὶ αὐτὸ κινεῖσθαι, πρό- τερον εἶρηται. διχῶς δὲ κινουμένου παντός (ἢ γὰρ καθ' ἑτερον

9. ἀποφαίνεται S T V W X, ἀποπέφανται etiam Them. || 10. ἡ πάντα nunc E sed inter ἡ et πάντα ras., cui subfuisse coni. à Rodier, δὲ Stapfer, ὅς δὲ πάντα Soph. 15, 7 || 11. δὴ pro δὲ coni. Hayduck, recepit Rodier, δὴ etiam Them. 14, 4 || πάντες ὡς εἰπεῖν τ. ψ. coni. Christ || τὴν om. S T, τὴν ψυχὴν om. V || 15. γιν. καὶ τὸ δμ. U, τὸ δμοιον γιν. S T y, καὶ τὸ δμοιον γιν. V W || τῷ δμ. τὸ δμ. X || ἐπειδὴ... 16. ἀρχῶν post 19. ποιοῦσιν transponenda censet Steinhart, Symb. Crit. p. 4, cui assentitur Susemihl, Oecon. p. 84 || ἡ om. E || 18. πλείω U V W, πλείονα y || 19. ποιοῦσιν] λέγουσιν S T U W y, ποιοῦσιν etiam Soph. || 21. γνωρίζει S U, γνωρίζοι y, futurum etiam Philop. || 25. ἄλλο om. X, ἄλλο... 26. τούτων om. E, tuentur haec verba Philop. 92, 1 Soph. || 26. post τιθέασιν vulg. punctum, colon posuit Diels || 27. γὰρ ex uno E restituit et post ἀκολουθοῦσιν colon posuit Thoms. cui assentitur etiam Noetel n. 142. praeterquam quod aut λέγοντες post 28. ψυχρὸν



has not been put forward by anyone, except by those who have explained the soul to be derived from, or identical with, all the elements.

Thus practically all define the soul by three characteristics, 20 motion, perception and incorporeality; and each of these  
**Summary.** characteristics is referred to the ultimate principles. Hence all who define soul by its capacity for knowledge either make it an element or derive it from the elements, being on this point, with one exception, in general agreement. Like, they tell us, is known by like; and therefore, since the soul knows all things, they say it consists of all the ultimate principles. Thus 21 those thinkers who admit only one cause and one element, as fire or air, assume the soul also to be one element; while those who admit a plurality of principles assume plurality also in the soul. Anaxagoras alone says that mind cannot be acted upon and has 22 nothing in common with any other thing. How, if such be its nature, it will know anything and how its knowledge is to be explained, he has omitted to state; nor do his utterances afford a clue. All those who introduce pairs of opposites among their 23 principles make the soul also to consist of opposites; while those who take one or other of the two opposites, either hot or cold or something else of the sort, reduce the soul also to one or other of these elements. Hence, too, they etymologise according to their theories; some identify soul with heat, deriving ζῆν from ζεῖν, and contend that this identity accounts for the word for life; others say that what is cold is called soul from the respiratory process and consequent "cooling down," deriving ψυχή from ψύχειν. Such, then, are the views regarding soul which have come down to us and the grounds on which they are held.

We have to consider in the first place the subject of motion. 3

**Criticism of the theory that soul is moved.** For, unless I am mistaken, the definition of soul as the self-moving, or as that which is capable of self-motion, misrepresents its essential nature: nay, more; it is quite impossible for soul to have the attribute of motion at all. To begin with, it has been already stated that a thing may 2 cause motion without necessarily being moved itself. A thing is always moved in one of two ways; that is, either indirectly,

poni, aut verba 29. καλεῖσθαι ψυχὴν eici vult, virgulam post λέγοντες omissam post θερμὸν posuit Rodier || 28. post ψυχρὸν virg. Torst. Biehl Rodier, quod si recte est, illud 27. γὰρ delendum est || 406 a, 1. εἶναι τὴν ψυχὴν U, τὴν om. etiam Philop. || αὐτὸ U W, εἶναι etiam Them. Philop.

ἡ καθ' αὐτό· καθ' ἕτερον δὲ λέγομεν, ὅσα κινεῖται τῷ ἐν 5  
κινουμένῳ εἶναι, οἷον πλωτῆρες· οὐ γὰρ ὁμοίως κινοῦνται τῷ  
πλοίῳ· τὸ μὲν γὰρ καθ' αὐτὸ κινεῖται, οἱ δὲ τῷ ἐν κινου-  
μένῳ εἶναι. δῆλον δ' ἐπὶ τῶν μορίων· οἰκεία μὲν γάρ ἐστι  
κίνησις ποδῶν βάδισις, αὕτη δὲ καὶ ἀνθρώπων· οὐχ ὑπάρ- 10  
χει δὲ τοῖς πλωτῆρσι τότε) δισσωῶς δὲ λεγομένου τοῦ κινεῖ-  
σθαι, νῦν ἐπισκοποῦμεν περὶ τῆς ψυχῆς εἰ καθ' αὐτὴν κι-  
3 νεῖται καὶ μετέχει κινήσεως. τεσσάρων δὲ κινήσεων οὐσῶν,  
φορᾶς ἀλλοιώσεως φθίσεως αὐξήσεως, ἡ μίαν τούτων κι-  
νοῖτ' ἂν ἡ πλείους ἢ πάσας. εἰ δὲ κινεῖται μὴ κατὰ συμ-  
βεβηκός, φύσει ἂν ὑπάρχουσι κίνησις αὐτῇ· εἰ δὲ τοῦτο, καὶ 15  
τόπος· πᾶσαι γὰρ αἱ λεχθεῖσαι κινήσεις ἐν τόπῳ. εἰ δ'  
ἐστὶν ἡ οὐσία τῆς ψυχῆς τὸ κινεῖν ἑαυτήν, οὐ κατὰ συμβε-  
βηκός αὐτῇ τὸ κινεῖσθαι ὑπάρξει, ὥσπερ τῷ λευκῷ ἡ  
τριπύχει· κινεῖται γὰρ καὶ ταῦτα, ἀλλὰ κατὰ συμβεβη-  
κός· ᾧ γὰρ ὑπάρχουσιν, ἐκείνο κινεῖται, τὸ σῶμα. διὸ καὶ 20  
οὐκ ἔστι τόπος αὐτῶν· τῆς δὲ ψυχῆς ἔσται, εἴπερ φύσει κι-  
4 νήσεως μετέχει. ἔτι δ' εἰ φύσει κινεῖται, καὶ βία κινη-  
θείη· καὶ εἰ βία, καὶ φύσει. τὸν αὐτὸν δὲ τρόπον ἔχει καὶ  
περὶ ἡρεμίας· εἰς δ' γὰρ κινεῖται φύσει, καὶ ἡρεμεῖ ἐν τούτῳ  
φύσει· ὁμοίως δὲ καὶ εἰς δ' κινεῖται βία, καὶ ἡρεμεῖ ἐν τού- 25  
τῳ βία. ποῖαι δὲ βίαιοι τῆς ψυχῆς κινήσεις ἔσονται καὶ  
5 ἡρεμιαί, οὐδὲ πλάττειν βουλομένοις ῥάδιον ἀποδοῦναι. ἔτι δ'  
εἰ μὲν ἄνω κινήσεται, πῦρ ἔσται, εἰ δὲ κάτω, γῆ· τούτων  
γὰρ τῶν σωμάτων αἱ κινήσεις αἵται. ὁ δ' αὐτὸς λόγος καὶ  
6 περὶ τῶν μεταξὺ. ἔτι δ' ἐπεὶ φαίνεται κινουσα τὸ σῶμα, 30  
ταύτας εὐλογον κινεῖν τὰς κινήσεις ἃς καὶ αὐτὴ κινεῖται.  
εἰ δὲ τοῦτο, καὶ ἀντιστρέψασιν εἰπεῖν ἀληθές ὅτι ἦν τὸ σῶ-

10. δισσωῶς solus E Philop. Biehl Rodier, reliqui et scripti et impressi διχῶς, etiam corr.  
rc. E (Rr.) || δὲ] οὖν U, Them. in interpr., δὲ coni. Sussemihl, Jen. I. lit. 1877, p. 707, δὲ  
etiam Philop. || 12. καὶ <οὐκ εἰ>, vel καὶ <οὐκ εἰ καθ' ἕτερον> coni. Sussemihl, καὶ  
<φύσει> Steinhart || 13. φθίσεως om. pr. E, leg. etiam Them. Philop., Dittenberger,  
Gött. gelehrte Anzeigen 1863 p. 1612, ex verbo φθίσεως in pr. E omisso suspicatur, primum  
tres tantum motus species hoc loco nominatas esse: cf. Soph. 17, 11 τριῶν δὲ οὐσῶν  
κινήσεων φυσικῶν || 18. ὑπάρξει praeter ceteros codd. etiam E, sed ξ in ras. (Stapf),  
leg. et Soph. || τῷ τριπύχει T U V W Bek. Trend. Torst., τῷ om. etiam Philop. 101, 8  
(ad 101, 11 v. Hayducki adn. crit.) Soph. || 20. virgulam post κινεῖται om. Bek. Trend.,  
addidit Torst. || 23. ei om. pr. E (Trend. Bus.) || καὶ φύσει] κατὰ φύσιν pr. E, verum καὶ  
ei βία, καὶ φύσει Trendelenburgio suspecta videntur, leg. etiam Philop. Simpl. Soph. ||

through something else, or directly, of and through itself. We say things are moved through something else when they are in something else that is moved: as, for instance, sailors on board a ship: for they do not move in the same sense as the ship, for the ship moves of itself, they because they are in something else which is moved. This is evident if we consider the members of the body: for the motion proper to the feet and so to men also is walking, but it is not attributable to our sailors in the case supposed. There being thus two senses in which the term "to be

Is the soul  
moved  
per se?

moved" is used, we are now enquiring whether it is of and through itself that the soul is moved and partakes of motion.

Of motion there are four species, change of place or loco-<sup>3</sup> motion, change of quality or alteration, diminution and augmentation. It is, then, with one or more or all of these species of motion. species that the soul will move. If it is not indirectly or *per accidens* that it moves, motion will be a natural attribute of soul; and, if this be so, it will also have position in space, since all the aforesaid species of motion are in space. But, if it be the essential nature of soul to move itself, motion will not be an accidental attribute of soul, as it is of whiteness or the length of three cubits; for these are also moved, but *per accidens*, viz. by the motion of the body to which these attributes belong. This, too, is why these attributes have no place belonging to them; but the soul will have a place, if indeed motion is its natural attribute.

The theory  
involves  
absurd  
conse-  
quences.

Further, if it moves naturally, then it will also move under<sup>4</sup> constraint; and, if under constraint, then also naturally. So likewise with rest. For, as it remains at rest naturally in any state into which it moves naturally, so similarly it remains at rest by constraint in any state into which it moves by constraint. But what is meant by constrained motions or states of rest of the soul it is not easy to explain, even though we give free play to fancy. Again, if its motion tends upward,<sup>5</sup> it will be fire; if downward, earth; these being the motions proper to these natural bodies. And the same argument applies to directions of motion which are intermediate.

Again, since it appears that the soul sets the body in motion,<sup>6</sup> it may reasonably be supposed to impart to it the motions which it has itself: and, if so, then conversely it is true to say that the motion which the soul has itself is the motion which the body

28. κινήσεται E<sub>1</sub>, superscr. θη E<sub>2</sub> (Stapf.). || 30. ἔπειτα δ' εἰ corr. E || 31. εὐλογον ταύτας ST V W X y, ταύτας εὐλ. etiam Soph.

μα κινεῖται, ταύτην καὶ αὐτή. τὸ δὲ σῶμα κινεῖται φορᾶ· 406b  
 ὥστε καὶ ἡ ψυχὴ [μεταβάλλοι ἂν κατὰ τὸ σῶμα] ἢ ὅλη ἢ  
 κατὰ μόρια μεθισταμένη. εἰ δὲ τοῦτ' ἐνδέχεται, καὶ ἐξελθοῦ-  
 σαν εἰσιέναι πάλιν ἐνδέχοιτ' ἂν· τοῦτω δ' ἔποιτ' ἂν τὸ ἀνί-  
 7 στασθαι τὰ τεθνεῶτα τῶν ζώων. τὴν δὲ κατὰ συμβεβηκὸς 5  
 κίνησιν κἂν ὑφ' ἑτέρου κινουίτο· ὠσθείη γὰρ ἂν βία τὸ ζῶον.  
 οὐ δεῖ δὲ ᾧ τὸ ὑφ' ἑαυτοῦ κινεῖσθαι ἐν τῇ οὐσίᾳ, τοῦθ' ὑπ'  
 ἄλλον κινεῖσθαι, πλὴν εἰ μὴ κατὰ συμβεβηκός, ὥσπερ οὐδὲ  
 τὸ καθ' αὐτὸ ἀγαθὸν ἢ δι' αὐτό, τὸ μὲν δι' ἄλλο εἶναι, τὸ  
 δ' ἑτέρου ἕνεκεν. τὴν δὲ ψυχὴν μάλιστα φαίη τις ἂν ὑπὸ τῶν 10  
 8 αἰσθητῶν κινεῖσθαι, εἴπερ κινεῖται. ἀλλὰ μὴν καὶ εἰ κινεῖ  
 γε αὐτὴ αὐτήν, καὶ αὐτὴ κινουίτ' ἂν, ὥστ' εἰ πᾶσα κίνησις  
 ἔκστασις ἐστὶ τοῦ κινουμένου ἢ κινεῖται, καὶ ἡ ψυχὴ ἐξίσταιτ'  
 ἂν ἐκ τῆς οὐσίας αὐτῆς, εἰ μὴ κατὰ συμβεβηκὸς ἑαυτὴν κινεῖ,  
 9 ἀλλ' ἔστιν ἡ κίνησις τῆς οὐσίας αὐτῆς καθ' αὐτήν. ἔνιοι δὲ καὶ 15  
 κινεῖν φασὶ τὴν ψυχὴν τὸ σῶμα ἐν ᾧ ἐστίν, ὥς αὐτὴ κινεῖται,  
 οἷον Δημόκριτος, παραπλησίως λέγων Φιλίππῳ τῷ κωμω-  
 δοδιδασκάλῳ· φησὶ γὰρ τὸν Δαίδαλον κινουμένην ποιῆσαι  
 τὴν ξυλίνην Ἀφροδίτην, ἐγγέαντ' ἄργυρον χυτόν· ὁμοίως δὲ  
 καὶ Δημόκριτος λέγει· κινουμένας γάρ φησι τὰς ἀδιαιρέτους 20  
 σφαίρας, διὰ τὸ πεφυκέναι μηδέποτε μένειν, συνεφέλκειν  
 10 καὶ κινεῖν τὸ σῶμα πᾶν. ἡμεῖς δ' ἐρωτήσομεν εἰ καὶ ἡρέ-  
 μῃσιν ποιεῖ ταῦτα ταῦτα. πῶς δὲ ποιήσῃ, χαλεπὸν ἢ καὶ  
 ἀδύνατον εἰπεῖν. ὅλως δ' οὐχ οὕτω φαίνεται κινεῖν ἢ ψυχὴν  
 τὸ ζῶον, ἀλλὰ διὰ προαιρέσεώς τινος καὶ νοήσεως. 25  
 11 τὸν αὐτὸν δὲ τρόπον καὶ ὁ Τίμαιος φυσιολογεῖ τὴν ψυχὴν  
 κινεῖν τὸ σῶμα· τῷ γὰρ κινεῖσθαι αὐτὴν καὶ τὸ σῶμα κινεῖν  
 διὰ τὸ συμπεπλέχθαι πρὸς αὐτό. συνεστηκυῖαν γὰρ ἐκ τῶν στοι-

406 b, 2. κατὰ τὸ σῶμα omnes codd., etiam Soph. et, ut videtur, Simpl. 37, 3. 4 et vet. transl., κατὰ τόπον con. Bon., Hermes VII, p. 424, μεταβάλλοι...σῶμα unc. inclusi, cf. Them. 16, 16 sq.; sin verba genuina sunt, fort. legendum ψυχῇ. μεταβάλλοι <δ'> ἂν κτέ. || 3. ἐνδέχοιτο STVW, εἰ δὲ τοῦτο, ἐνδέχοιτ' ἂν καὶ γ Bon. l. 1., ἐνδέχεται etiam Soph. et vet. transl. || 4. ἐνδέχοιτ' ἂν om. SWXy Bon., leg. etiam Soph. et vet. transl. || τοῦτω...5. ζώων a manu Christiani lectoris inserta esse suspicatur Trend., cui adversatur Bon. || 8. μὴ om. E Simpl., leg. Philop. || 9. δι' αὐτὸ δν con. Christ || 12. γε om. STVW Alex. απ. καὶ λυσ. 46, 24 Soph. || ἑαυτὴν STUVW y et corr. E<sub>2</sub> Soph. || εἰ ἐπει Alex. 46, 25 || 13. ἐξίσταίη T, ἐξίσταται (omisso ἂν) SWX, ἐξίστατο y, ἐξίστατο ἂν Alex. 46, 26 || 14. οὐσίας αὐτῆς καθ' αὐτήν, sed καθ' αὐτήν expunct. E, αὐτῆς receperunt Biehl Rodier, αὐτῆς hoc loco legisse videntur Them. 18, 11 et Soph. 18, 36, omitunt ceteri, etiam Simpl. Philop. || 15. καθ' αὐτήν unc. incl. Torst.,

has. Now the motion of the body is motion in space: therefore the motion of the soul is also motion in space, whether the whole soul so move, or only the parts, the whole remaining at rest. But, if this is admissible, the soul might also conceivably quit the body and re-enter; and this would involve the consequence that dead animals may rise again.

To return now to motion *per accidens*, soul might certainly 7 thus be moved by something external as well:—for the animal might be thrust by force. But a thing which has self-motion as part of its essential nature cannot be moved from without except incidentally; any more than that which is good in itself can be means to an end, or that which is good for its own sake can be so for the sake of something else. But, supposing the soul to be moved at all, one would say that sensible things would be the most likely to move it.

Again, even if soul does move itself, this is equivalent to saying 8 that it is moved; and, all motion being defined as displacement of the thing moved *quâ* moved, it will follow that the soul will be displaced from its own essential nature, if it be true that its self-movement is not an accident, but that motion belongs to the essence of soul in and of itself. Some say that the soul in fact 9 moves the body, in which it is, in the same way in which it moves itself. So, for example, Democritus; and herein he resembled Philippus, the comic poet, who tells us that Daedalus endowed the wooden Aphrodite with motion, simply by pouring in quicksilver: this is very similar to what Democritus says. For according to him the spherical atoms, which from their nature can never remain still, being moved, tend to draw the whole body after them and thus set it in motion. But do these same atoms, 10 we shall ask in our turn, produce rest, as well as motion? How this should be, it is difficult, if not impossible, to say. And, speaking generally, it is not in this way that the soul would seem to move the animal, but by means of purpose 11 of some sort, that is, thought.

In the same way the Platonic Timaeus explains on physical 11 grounds that the soul sets the body in motion, for by its own motion it sets the body also in motion, because it is closely interwoven with it. For when it had been made out of

tuetur haec praeter omnes codd. Alex. 47, 1. || 19. δὲ om. Wy || 21. post σφαίρας virg. posuit Diels, post μένεν virg. om. Biehl Rodier || 22. καὶ τε καὶ TV y || ἐρωτήσωμεν STUVW || ἡρεμήσειν STUVW, ἡρεμεῖν X, ἡρέμῃσιν etiam Soph. || 23. ποιεῖ τοῦτ' αὐτό STUWX, τοῦτο ποιεῖ ποτε V, ποιεῖ τοῦτο αὐτὸ γ' et E, sed in rasura, videtur subfuisse ταῦτα ταῦτ' (Bek. Trend.), τοῦτο ποιεῖ αὐτό Soph. 18, 31.

χείων καὶ μεμερισμένην κατὰ τοὺς ἁρμονικοὺς ἀριθμούς, ὅπως  
 αἰσθησὶν τε σύμφυτον ἁρμονίας ἔχη καὶ τὸ πᾶν φέρεται<sup>30</sup>  
 συμφώνους φοράς, τὴν εὐθυωρίαν εἰς κύκλον κατέκαμψεν·  
 καὶ διελὼν ἐκ τοῦ ἐνὸς κύκλους δύο δισσαχῇ συνημμένους  
 πάλιν τὸν ἕνα διεῖλεν εἰς ἑπτὰ κύκλους, ὡς οὕτως τὰς τοῦ<sup>407a</sup>  
 12 οὐρανοῦ φοράς τὰς τῆς ψυχῆς κινήσεις. πρῶτον μὲν οὖν οὐ κα-  
 λῶς τὸ λέγειν τὴν ψυχὴν μέγεθος εἶναι· τὴν γὰρ τοῦ παν-  
 τὸς δῆλον ὅτι τοιαύτην εἶναι βούλεται οἷόν ποτ' ἐστὶν ὁ καλού-  
 μενος νοῦς· οὐ γὰρ δὴ οἷόν γ' ἡ αἰσθητική, οὐδ' οἷον ἡ ἐπιθυ-  
 5 13 μητική· τούτων γὰρ ἡ κίνησις οὐ κυκλοφορία· ὁ δὲ νοῦς εἰς  
 καὶ συνεχὴς ὥσπερ καὶ ἡ νόησις· ἡ δὲ νόησις τὰ νοήμα-  
 τα· ταῦτα δὲ τῷ ἐφεξῆς ἔν, ὡς ὁ ἀριθμός, ἀλλ' οὐχ ὡς τὸ  
 μέγεθος· διόπερ οὐδ' ὁ νοῦς οὕτω συνεχὴς, ἀλλ' ἤτοι ἀμερὴς ἢ  
 οὐχ ὡς μέγεθός τι συνεχὴς. πῶς γὰρ δὴ καὶ νοήσει μέγε-  
 10 θος ὧν; πότερον ὁπωσοῦν μορίῳ τῶν αὐτοῦ; μορίῳ δ' ἤτοι κατὰ  
 14 μέγεθος ἢ κατὰ στιγμήν, εἰ δεῖ καὶ τοῦτο μόριον εἰπεῖν. εἰ  
 μὲν οὖν κατὰ στιγμήν, αὐταὶ δ' ἄπειροι, δῆλον ὡς οὐδέποτε  
 διέξιεν· εἰ δὲ κατὰ μέγεθος, πολλάκις ἢ ἀπειράκις νοή-  
 σει τὸ αὐτό. φαίνεται δὲ καὶ ἅπαξ ἐνδεχόμενον. εἰ δ' ἴκα-  
 15 νὸν θιγεῖν ὁπωσοῦν τῶν μορίων, τί δεῖ κύκλῳ κινεῖσθαι ἢ καὶ  
 ὅλως μέγεθος ἔχειν; εἰ δ' ἀναγκαῖον νοῆσαι τῷ ὅλῳ κύκλῳ  
 θιγόντα, τίς ἐστὶν ἡ τοῖς μορίοις θίξις; ἔτι δὲ πῶς νοήσει τὸ  
 μεριστὸν ἀμερεῖ ἢ τὸ ἀμερὲς μεριστῷ; ἀναγκαῖον δὲ τὸν  
 νοῦν εἶναι τὸν κύκλον τοῦτον· νοῦ μὲν γὰρ κίνησις νόησις, κύ-  
 20 15 κλου δὲ περιφορά· εἰ οὖν ἡ νόησις περιφορά, καὶ νοῦς ἂν εἴη

30. τc] τε καὶ T U, καὶ om. etiam Them. Philop. || ἁρμονίαν T U W Soph., ἁρμονίας  
 etiam Them. Philop. in interpr., v. Hayducki ap. crit. 22, 27 || 32. κύκλοις δύο ex uno  
 E recepit Torst., reliqui ante Torst. omnes δύο κύκλους, Soph. 19, 23 ἐκ τοῦ ἐνὸς κύκλου δύο ||  
 407a, 5. γ' om. Wy, leg. etiam Simpl. in prooemio ad lib. I, p. 4, 1 et Soph. || 6. ante  
 ὁ δὲ transponendum 19. ἀναγκαῖον... 22. νόησις censet Sussemihl, Oecon. p. 84 || τούτων...  
 κυκλοφορία unc. incl. Essen, p. 18 || 7. καὶ συνεχὴς unc. incl. Essen || 8. ὁ ἀριθμός pr. E  
 (Trend.) et U Simpl. Philop. (ed. princeps) Torst., reliqui ante Torst. omnes om. arti-  
 culum, etiam Philop. (Hayduck cum codic.) || 9. οὐδὲ νοῦς U W, οὐδὲ delere vult A.  
 Martin, Revue Critique, 1902, p. 427 || οὕτω Biehlio suspectum videtur, delendum censet  
 A. Martin, legit etiam Simpl. Soph. 20, 37 || συνεχὴς unc. incl. Essen || 11. ὧν; πότερον  
 ὁπωσοῦν μορίῳ recepit Biehl ex solo pr. E (cf. Sussemihl, Oecon. p. 84), ὧν ὁπωσοῦν τῶν μορίων  
 (omisso πότερον) rc. E et ceteri codic. (praeterquam quod V ἐν ὅτ. praeibet) Philop.,  
 quam lectionem etiam Bek. recepit, ὧν πότερον καθόλου ἢ ὁπωσοῦν τῶν μορ. scripsit Trend.,  
 sic etiam vet. transl., ὧν; πότερον καθ' ὅλον θιγὼν ἢ ὁπωσοῦν τῶν μορ. posuit Torst., ὧν;  
 πότερον καθ' ὅλον ἢ ἐν ὁπωσοῦν τῶν μορίων Simpl. 42, 38, Soph. 21, 7 (coll. 21, 30; 22,  
 11. 23), unde ὧν; πότερον καθ' ὅλον ἢ ὁπωσοῦν τῶν μορίων Rodier || τῶν om. V Soph. ||  
 ἐαυτοῦ T, αὐτοῦ y Ald. Sylb. Rodier, etiam Philop. Simpl. Soph. || μορίων δ' omnes

the elements and divided in harmonical ratios in order that it might have a native perception of proportion and that the universe might move in harmonic revolutions, he, the creator, proceeded to bend the straight line into a circle; and then to split the one circle into two, intersecting at two points; and one of the two circles he split into seven, the revolutions of heaven being regarded as the motions of the soul. In the first place, it is not right to call <sup>12</sup> the soul a magnitude. For by the soul of the universe <sup>13</sup> Timaeus clearly intends something of the same sort as what is known as mind: he can hardly mean that it is like the sensitive or appetitive soul, whose movements are not circular. But the thinking mind is one and continuous in the same sense <sup>14</sup> as the process of thinking. Now thinking consists of thoughts. But the unity of these thoughts is a unity of succession, the unity of a number, and not the unity of a magnitude. This being so, neither is mind continuous in this latter sense, but either it is without parts or else it is continuous in a different sense from an extended magnitude. For how can it possibly think if it be a magnitude? Will it think with some one or other of its parts: such parts being taken either in the sense of magnitudes or in the sense of points, if a point can be called a part? If it be with <sup>15</sup> parts in the sense of points, and there is an infinity of these, clearly mind will never reach the end of them; while, if they be taken in the sense of magnitudes, mind will have the same thoughts times without end. But experience shows that we can think a thought once and no more. Again, if it be enough for the soul to apprehend with one or other of its parts, what need is there for it to be moving in a circle or to have magnitude at all? But, if it is necessary to thought that the mind should bring the whole circle into contact, what does the contact of the several parts mean? Again, how will it think that which is divisible by means of that which is without parts, or that which is without parts by means of that which is divisible? It must be mind which is meant by the circle in question. For when mind moves it thinks; when a circle moves it revolves. If, then, thought <sup>15</sup> is a revolution, the circle which has such a revolution must

libri scripti et impressi, etiam Philop. (sed v. l. *μορίψ*) Soph., *μορίψ δ' ε* Susemihlii et sua coniectura Biehl, etiam Rodier || scripsisse Arist. v. 11. *ὤν; πρότερον ὁρῶν τῶν αὐτοῦ <μορίων>; μορίων δ'* suspicor || 15. *φαίνεται...ἐνδεχόμενον* a philosopho Platónico interpolatum existimat Christ, non legisse videtur Philop., legunt etiam Them. Simpl. Soph. || *εἰ θ'* coni. Susemihl || 16. *καὶ* om. S V W, leg. etiam Them. || 19. *ἢ τὸ* E (Trend.) et y Philop. Soph. vet. transl. Torst., reliqui ante Torst. omnes *καὶ τὸ* || *ἀναγκαῖον*] v. ad 407 a, 6.

ὁ κύκλος, οὗ ἡ τοιαύτη περιφορὰ [νόησις]. αἰεὶ δὲ δὴ τι νοή-  
 σει· δεῖ γάρ, εἴπερ αἰδίδιος ἡ περιφορὰ· τῶν μὲν γὰρ πρα-  
 κτικῶν νοήσεων ἔστι πέρατα (πᾶσαι γὰρ ἐτέρου χάριν), αἱ δὲ  
 θεωρητικαὶ τοῖς λόγοις ὁμοίως ὀρίζονται· λόγος δὲ πᾶς ὀρι- 25  
 σμὸς ἢ ἀποδείξις· αἱ μὲν οὖν ἀποδείξεις καὶ ἀπ' ἀρχῆς, καὶ  
 ἔχουσιν πῶς τέλος τὸν συλλογισμόν ἢ τὸ συμπέρασμα· εἰ δὲ  
 μὴ περατοῦνται, ἀλλ' οὐκ ἀνακάμπουσιν γε πάλιν ἐπ' ἀρχήν,  
 προσλαμβάνουσαι δ' αἰεὶ μέσον καὶ ἄκρον εὐθυποροῦσιν· ἡ δὲ  
 περιφορὰ πάλιν ἐπ' ἀρχήν ἀνακάμπει. οἱ δ' ὀρισμοὶ πάν- 30  
 16 τες πεπερασμένοι. ἔτι εἰ ἡ αὕτη περιφορὰ πολλάκις, δεή-  
 17 σει πολλάκις νοεῖν τὸ αὐτό. ἔτι δ' ἡ νόησις ἔοικεν ἡρεμήσει  
 τινὶ καὶ ἐπιστάσει μᾶλλον ἢ κινήσει· τὸν αὐτὸν δὲ τρόπον  
 18 καὶ ὁ συλλογισμὸς. ἀλλὰ μὴν οὐδὲ μακάριόν γε τὸ μὴ ῥά-  
 διον ἀλλὰ βίαιον. εἰ δ' ἐστὶν ἡ κίνησις αὐτῆς μὴ οὐσία, πα- 407 b  
 19 ρὰ φύσιν ἂν κινούιτο. ἐπίπονον δὲ καὶ τὸ μεμεῖχθαι τῷ σώ-  
 ματι μὴ δυνάμενον ἀπολυθῆναι, καὶ προσέτι φευκτόν, εἴ-  
 περ βέλτιον τῷ νῷ μὴ μετὰ σώματος εἶναι, καθάπερ εἰωθέ  
 20 τε λέγεσθαι καὶ πολλοῖς συνδοκεῖ. ἄδηλος δὲ καὶ τοῦ 5  
 κύκλῳ φέρεσθαι τὸν οὐρανὸν ἢ αἰτία· οὔτε γὰρ τῆς ψυχῆς ἢ  
 οὐσία αἰτία τοῦ κύκλῳ φέρεσθαι, ἀλλὰ κατὰ συμβεβηκὸς  
 οὕτω κινεῖται, οὔτε τὸ σῶμα αἴτιον, ἀλλ' ἡ ψυχὴ μᾶλλον  
 21 ἐκείνῳ. ἀλλὰ μὴν οὐδ' ὅτι βέλτιον λέγεται· καίτοι γ' ἐχρῆν  
 διὰ τοῦτο τὸν θεὸν κύκλῳ ποιεῖν φέρεσθαι τὴν ψυχὴν, ὅτι 10  
 βέλτιον αὐτῇ τὸ κινεῖσθαι τοῦ μένειν, κινεῖσθαι δ' οὕτως ἢ ἄλλως.  
 ἐπεὶ δ' ἐστὶν ἡ τοιαύτη σκέψις ἐτέρων λόγων οἰκειο-  
 22 τέρα, ταύτην μὲν ἀφῶμεν τὸ νῦν. ἐκείνο δὲ ἄτοπον συμ-  
 βαίνει καὶ τούτῳ τῷ λόγῳ καὶ τοῖς πλείστοις τῶν περὶ ψυ-  
 χῆς· συνάπτουσι γὰρ καὶ τιθέασιν εἰς σῶμα τὴν ψυχὴν, οὐ- 15  
 θὲν προσδιορίσαντες διὰ τίν' αἰτίαν καὶ πῶς ἔχοντος τοῦ σώ-  
 ματος. καίτοι δόξειεν ἂν τοῦτ' ἀναγκαῖον εἶναι· διὰ γὰρ τὴν

22. νόησις unc. incl. Torst., sine uncis Biehl Rodier, non legisse videtur Soph. 23, 17, virgulam ante νόησις posuit Rodier || δὴ τι νοήσει· Soph. Bek. Trendl., δὴ τί νοήσει; Simpl. Torst. Biehl Rodier || 23. γὰρ ποιητικῶν ἢ πρακτ. S U W X, ποιητικῶν ἢ non legisse videntur Them. Philop. (v. tamen Hayducki app. crit. ad 133, 8) Simpl. || 25. πᾶς ἢ U y || 26. αἱ δ' ἀποδείξεις S T U V W X Bek. Trendl., αἱ μὲν οὖν ἀποδείξεις y et, ut videtur, Soph. 23, 27, Torst., ἡ μὲν οὖν ἀπόδειξις E, sed superscr. αἱ et eis E<sub>2</sub> (Stapf.) Biehl Rodier || 27. ἔχουσα E Biehl Rodier, reliqui et scripti et impressi ἔχουσι || 29. προσαναλαμβάνουσαι E, sed ana expunct. (Stapf.) Torst., προσκαταλαμβάνουσαι y, reliqui προσλαμβάνουσαι, etiam Philop. Soph. || 30. οὐ ὅ' ὅρ. conl. Christ || 407 b, 1. μὴ οὐσία corrupta putat et conl. ἡ οὐσία Torst., ἡ οὐσία <καὶ>, vel <ἐκστασις ἐκ> τῆς οὐσίας



be mind. But then it will go on thinking of something for ever, for this is required by the eternity of the revolution. To practical thinking there are limits, for it always implies an external end; while speculative thinking is determined in the same way as the logical explanations which express it. Now every explanation consists either in definition or in demonstration. But demonstrations have a premiss for starting-point and reach a kind of goal in the inference or conclusion; while, even if they never reach a conclusion, at all events they do not revert to the starting-point, but with the aid of a succession of middle terms and extremes advance in a straight line. But circular movement returns to the point from which it started. Definitions, too, are all determinate. Besides, if the same revolution recurs again and again, the mind 16 will be obliged to think the same thing again and again. Further, 17 it is a sort of rest or coming to a halt, and not motion, which thinking resembles: and we may say the same of the syllogism. Nor, again, will that which does not move easily, but under con- 18 straint, even realise happiness. If the motion of soul be not its essence, it will be an unnatural motion. And the entanglement of 19 the mind in the body without the possibility of release is painful; nay, it is to be avoided, if indeed it is really better for mind to be independent of body, a view commonly expressed and widely accepted. Also it is not clear why the heaven revolves in a circle; 20 seeing that circular motion is neither implied by the essence of soul (that form of movement being indeed merely accidental to it), nor due to the body: on the contrary it is rather the soul which causes the motion of the body. Besides, we are not even told that 21 it is better so: yet surely the reason why God made the soul revolve in a circle ought to have been that movement was better for it than rest, and this form of movement better than any other.

But such an enquiry as this belongs more appropriately to a different subject: so let us dismiss it for the present. We may, 22 however, note here another absurdity which is involved in this as in most other theories concerning the soul. They attach the soul to, and enclose it in, body, without further determining why this happens and what is the condition of the body. And yet some such explanation would seem to be required, as it is owing to their relationship that the

Relation  
between  
soul and  
body ig-  
nored.

vel *μη ἡ οὐσία* coni. Susemihl, ac sane quidem Them. 22, 35 non leg. negationem, leg. *μη* Philop. Simpl. Soph. et vet. transl. || 2. *ἀν κινούτο* E Simpl., ceteri codd. *κινούτ' ἀν* || 9. *γ'* om. E (Trend.) et Torst., etiam Soph. 24, 21 || 10. *ποιεῖν κύκλῳ* S V W γ Torst., *κύκλῳ ποιεῖν* etiam Soph. || 14. *τῶν περὶ*, sic omnes codd., etiam E (Trend.) et Them., *τοῖς περὶ* Soph.

κοινωνίαν τὸ μὲν ποιεῖ τὸ δὲ πάσχει καὶ τὸ μὲν κινεῖται τὸ  
 δὲ κινεῖ, τούτων δ' οὐθὲν ὑπάρχει πρὸς ἀλλήλα τοῖς τυχοῦσιν.  
 23 οἱ δὲ μόνον ἐπιχειροῦσι λέγειν ποιόν τι ἡ ψυχὴ, περὶ δὲ τοῦ 20  
 δεξομένου σώματος οὐθὲν ἔτι προσδιορίζουσιν, ὥσπερ ἐνδεχό-  
 μενον κατὰ τοὺς Πυθαγορικοὺς μύθους τὴν τυχοῦσαν ψυχὴν εἰς  
 τὸ τυχόν ἐνδύεσθαι σῶμα· δοκεῖ γὰρ ἕκαστον ἴδιον ἔχειν εἰ-  
 δος καὶ μορφήν. παραπλήσιον δὲ λέγουσιν ὥσπερ εἴ τις  
 φαίη τὴν τεκτονικὴν εἰς αὐλοὺς ἐνδύεσθαι· δεῖ γὰρ τὴν μὲν 25  
 τέχνην χρῆσθαι τοῖς ὀργάνοις, τὴν δὲ ψυχὴν τῷ σώματι.  
 4 Καὶ ἄλλη δὲ τις δόξα παραδέδοται περὶ ψυχῆς, πι-  
 θανὴ μὲν πολλοῖς οὐδεμιᾶς ἦττον τῶν λεγομένων, [λόγους δ']  
 ὥσπερ εὐθύνας <δὲ> δεδωκυῖα καὶ τοῖς ἐν κοινῷ γινομένοις λό-  
 γοις. ἀρμονίαν γὰρ τινα αὐτὴν λέγουσι· καὶ γὰρ τὴν ἀρ- 30  
 μονίαν κρᾶσιν καὶ σύνθεσιν ἐναντίων εἶναι, καὶ τὸ σῶμα συγ-  
 2 κέσθαι ἐξ ἐναντίων. καίτοι γε ἡ μὲν ἀρμονία λόγος τίς ἐστι  
 τῶν μειχθέντων ἢ σύνθεσις, τὴν δὲ ψυχὴν οὐδέτερον οἶόν τ'  
 3 εἶναι τούτων. ἔτι δὲ τὸ κινεῖν οὐκ ἔστιν ἀρμονίας, ψυχῇ δὲ  
 4 πάντες ἀπονέμουσι τοῦτο μάλισθ' ὥς εἰπεῖν. ἀρμόζει δὲ μᾶλ- 408a  
 λον καθ' ὑγιείας λέγειν ἀρμονίαν, καὶ ὅλως τῶν σωματι-  
 κῶν ἀρετῶν, ἣ κατὰ ψυχῆς. φανερώτατον δ' εἴ τις ἀπο-  
 διδόναι πειραθείη τὰ πάθη καὶ τὰ ἔργα τῆς ψυχῆς ἀρμο-  
 5 νία τι· χαλεπὸν γὰρ ἐφαρμόζειν. ἔτι δ' εἰ λέγομεν τὴν 5  
 ἀρμονίαν εἰς δύο ἀποβλέποντες, κυριώτατα μὲν τῶν μεγε-  
 θῶν ἐν τοῖς ἔχουσιν κίνησιν καὶ θέσιν τὴν σύνθεσιν αὐτῶν, ἐπει-  
 δὰν οὕτω συναρμόζωσιν ὥστε μηδὲν συγγενὲς παραδέχεσθαι,  
 ἐντεῦθεν δὲ καὶ τὸν τῶν μεμειγμένων λόγον, οὐδετέρως μὲν οὖν  
 εὐλογον, ἢ δὲ σύνθεσις τῶν τοῦ σώματος μερῶν λίαν εὐεξέ- 10

18. ποιεῖ τι τὸ S T V W X || 24. καὶ] σῶμα καὶ e solo E scripsit Biehl, ceteri scripti et impressi om. σῶμα, etiam Simpl. Philop. 139, 26 sqq. || δὴ S X, δὴ τι T V W et Them. : 27. de loco 27...408 a, 29. cf. Bon., Hermes VII, p. 428 sqq. || 28. πολλοῖς καὶ οὐδεμιᾶς T W pr. y Soph. || ἦττον T V W X y et corr. S Soph. v. l. (ἦττον e cold. Hayduck, 25, 5), πιθανὴ μὲν οὐδεμιᾶς ἦσσαν Them. || λόγοις V, λόγον coni. Torst., λόγον δ' ὥσπερ καὶ coni. Bergk, Hermes XVIII, 518, λόγον δὲ καὶ ὥσπερ Susemihl, λόγους δ' omittendum censet Bernays, die Dialoge des Arist. p. 15, cui assentiuntur Haecker (Zeitschr. f. Gym. 1864, p. 204) et Bonitz (Hermes VII, p. 429), unc. inclusi, λόγους leg. Philop. Soph., non legisse videtur Them. || 29. <δὲ> e Bernaysii coniectura scripsi || γινομένοις λόγοις sic etiam Simpl., λεγομένοις λόγοις W Philop. in interpr. 145, 22, λεγομένοις S || 30. αὐτὴν twes V W y, twes etiam Them. et Philop. 141, 31 legisse videtur || 32. γε om. E Soph. Torst. || 408 a, i. ἀπονέμουσιν ἅπαντες τοῦτο S T V W y, ἅπαντες ἀπ. τ. X, πάντες etiam Soph. || 3. φανερωτάτων E, φανερώτατον corr. E<sub>2</sub> (Stapf.) || 5. λέγομεν pr. E (Trendl.)

one acts, the other is acted upon, that the one is moved, and the other causes it to move; and between two things taken at random no such mutual relations exist. The supporters of such 23 theories merely undertake to explain the nature of the soul. Of the body which is to receive it they have nothing more to say: just as if it were possible for any soul taken at random, according to the Pythagorean stories, to pass into any body. This is absurd, for each body appears to have a distinctive form or shape of its own. It is just like talking of a transmigration of carpentry into flutes: for the craft must employ the right tools and the soul the right body.

There is yet another opinion concerning soul which has come 4 down to us, commending itself to many minds as readily as any that is put forward, although it has been severely criticised even in the popular discussions of the present day. The soul 4 is asserted to be a kind of harmony, for harmony is on this view a blending or combining of opposites, and the components of the body are opposites. And yet this 2 harmony must mean either a certain proportion in the components or else the combining of them; and the soul cannot possibly be either of these. Furthermore, to cause motion is no attribute of 3 a harmony: yet this function more than any other is all but universally assigned to soul. Again, it is more in harmony with 4 the facts to apply the term harmony to health or bodily excellence generally than to soul, as is very clearly seen when we try to assign to a harmony of whatever kind the affections or functions of the soul: it is difficult to harmonise them.

Further, if we use the word harmony with a twofold appli- 5 cation; first, and in its most natural sense, of those magnitudes which have motion and position, to denote the combining of them into a whole, when they are so closely fitted together that they do not admit between them anything of the same kind; and then in a secondary sense to denote the proportion subsisting between the components of a mixture: in neither sense is it reasonable to call soul a harmony. The view which regards it as a combining of the parts of the body is singularly

The theory  
of har-  
mony.

Two  
meanings  
of the  
term har-  
mony.

STVX et, ut videtur, Soph. 25, 34, Torst. Bon., stud. Arist. II, III. p. 61, *ἔτι δὲ λέγομεν* Madvig 471, reliqui ante Torst. omnes *λέγομεν* || 8. *συνγενέσθαι* E, *μηδὲν μὴ συγγενὲς* conii. Steinhart, *μηδὲν <μήτε συγγενὲς μήτε μὴ> συγγενὲς* conii. Susemihl, Burs. Jahrb. XVII, 261, vulgat. leg. interpretes, etiam Alex. De an. 25, 10 || 9. post *λόγον* punctum Bek., colon Torst., virgulam Trend.

ταστος. πολλάι τε γὰρ αἱ συνθέσεις τῶν μερῶν καὶ πολλα-  
 χῶς· τίνος οὖν ἢ πῶς ὑπολαβεῖν τὸν νοῦν χρή σύνθεσιν εἶναι,  
 6 ἢ καὶ τὸ αἰσθητικὸν ἢ ὀρεκτικόν; ὁμοίως δὲ ἄτοπον καὶ <τὸ> τὸν  
 λόγον τῆς μείξεως εἶναι τὴν ψυχὴν· οὐ γὰρ τὸν αὐτὸν ἔχει  
 λόγον ἢ μείξεις τῶν στοιχείων καθ' ἣν σὰρξ καὶ καθ' ἣν ὅσπουν· 15  
 συμβήσεται οὖν πολλὰς τε ψυχὰς ἔχειν καὶ κατὰ πᾶν τὸ  
 σῶμα, εἴπερ πάντα μὲν ἐκ τῶν στοιχείων μεμειγμένων, ὁ δὲ  
 7 τῆς μείξεως λόγος ἁρμονία καὶ ψυχὴ. ἀπαιτήσκει δ' αὖ τις  
 τοῦτό γε καὶ παρ' Ἑμπεδοκλέους· ἕκαστον γὰρ αὐτῶν λόγῳ  
 τινὶ φησιν εἶναι· πότερον οὖν ὁ λόγος ἐστὶν ἢ ψυχὴ, ἢ μάλ- 20  
 λον ἕτερόν τι οὐσα ἐγγίνεται τοῖς μέλεσιν; ἔτι δὲ πότερον ἢ  
 φιλία τῆς τυχοῦσης αἰτία μείξεως ἢ τῆς κατὰ τὸν λόγον; καὶ  
 αὕτη πότερον ὁ λόγος ἐστὶν ἢ παρὰ τὸν λόγον ἕτερόν τι;  
 8 ταῦτα μὲν οὖν ἔχει τοιαύτας ἀπορίας. εἰ δ' ἐστὶν ἕτερον ἢ  
 ψυχὴ τῆς μείξεως, τί δὴ ποτε ἅμα τῷ σαρκὶ εἶναι ἀναι- 25  
 ρεῖται καὶ τῷ τοῖς ἄλλοις μορίοις τοῦ ζῴου; πρὸς δὲ τοῦτοις εἴπερ  
 μὴ ἕκαστον τῶν μορίων ψυχὴν ἔχει, εἰ μὴ ἐστὶν ἢ ψυχὴ ὁ λόγος  
 τῆς μείξεως, τί ἐστὶν ὃ φθείρεται τῆς ψυχῆς ἀπολειπούσης;  
 ὅτι μὲν οὖν οὐθ' ἁρμονίαν οἶόν τ' εἶναι τὴν ψυχὴν  
 9 οὔτε κύκλῳ περιφέρεσθαι, δῆλον ἐκ τῶν εἰρημένων. κατὰ 30  
 συμβεβηκὸς δὲ κινεῖσθαι, καθάπερ εἵπομεν, ἐστὶ καὶ κι-  
 νεῖν ἑαυτήν, οἷον κινεῖσθαι μὲν ἐν ᾧ ἐστί, τοῦτο δὲ κινεῖσθαι  
 ὑπὸ τῆς ψυχῆς· ἄλλως δ' οὐχ οἶόν τε κινεῖσθαι κατὰ τόπον  
 10 αὐτήν. εὐλογώτερον δ' ἀπορήσειεν αὖ τις περὶ αὐτῆς ὡς κι-  
 νουμένης, εἰς τὰ τοιαῦτα ἀποβλέψας. φαμὲν γὰρ τὴν ψυ- 408b  
 χὴν λυπεῖσθαι χαίρειν, θαρρεῖν φοβεῖσθαι, ἔτι δὲ ὀργί-  
 ζεσθαί τε καὶ αἰσθάνεσθαι καὶ διανοεῖσθαι· ταῦτα δὲ πάν-  
 τα κινήσεις εἶναι δοκοῦσιν. ὅθεν οἰηθεῖται τις αὐτὴν κινεῖσθαι·  
 11 τὸ δ' οὐκ ἐστὶν ἀναγκαῖον. εἰ γὰρ καὶ ὅτι μάλιστα τὸ λυπεῖ- 5

11. αἱ om. T V || μερῶν πολλῶν nunc E, subfuisse videtur μερῶν (Stapf.) || 12. χρή  
 τὸν νοῦν S T V W y || 13. καὶ τὸ λόγον V X, quod probat Bon., stud. Arist. I. p. 97, adn.  
 1, καὶ τὸ τὸν λόγον Soph., quod in textum receperunt Biehl Rodier, malunt etiam Torst.  
 et Bon., stud. Arist. II, III. p. 61, reliqui καὶ τὸν λόγον || 15. post ὁσπουν punctum vulg.,  
 colon posuit Diels || 18. ἀπαιτήσκει...28. ἀπολειπούσης in parenth. Torst. || 19. αὐτῶν ἐν  
 λόγῳ W y Soph. || 21. μέλεσιν pr. E W et, ut videtur, y Torst. Biehl Rodier, μέλεσιν re.  
 E S T U V Bek. Trendl. Diels, p. 175, μεχθεῖσιν X Philop. 150, 11 Soph. || 26. τὸ T et in  
 interpr. Philop. Simpl. Chaignet, Essai sur la psych. d'Arist. p. 246, adn. 2, Sussemhl, om.  
 S V W, τῷ in interpr. etiam Them. Soph. || 27. μὴ prius delendum esse censet Chaignet,  
 at Simplicium vulgat. non legisse ex interpr. 56, 18 seqq. parum constat. || 28. τί ἐστὶν ὃ  
 φθείρεται videtur corrupta Torst., tuentur haec verba praeter omnes codd. Them. Philop.

open to criticism. For there are many combinings of the parts, and they combine in many ways. What part, then, is that whose combining with the rest we must assume to be the intellect, and in what way does it combine? Or again, what of the sensitive and appetitive faculties? But it is equally absurd to regard the soul 6 as the proportion determining the mixture. For the elements are not mixed in the same proportion in flesh as in bone. Thus it will follow that there are many souls, and that, too, all over the body, if we assume that all members consist of the elements variously commingled and that the proportion determining the mixture is a harmony, that is, soul. This is a question we might 7

ask Empedocles; who says that each of the parts is determined by a certain proportion. Is the soul, then, this proportion, or is it rather developed in the frame as something distinct? And, further, is it a mixture at random or a mixture in the right proportion which he ascribes to Love: and, if the latter, is Love the proportion itself or something other than the proportion and distinct from it? Such, then, are the difficulties involved in this view. On the other hand, if soul is something distinct from 8 the mixture, how comes it that it is destroyed simultaneously with the disappearance of the quiddity of the flesh and of the other parts of the animal? And, further, assuming that each of the separate parts has not a soul of its own, unless the soul be the proportion of their admixture, what is it that perishes when the soul quits the body?

From what has been said it is clear that the soul cannot be a harmony and cannot revolve in a circle. But incidentally it can, as we have seen, move and set itself in motion: for instance, the body in which it is may move, and be set in motion by the soul: otherwise it cannot possibly move from place to place. The question whether the soul is moved would 10 more naturally arise in view of such facts as the following. The soul is said to feel pain and joy, confidence and fear, and again to be angry, to perceive and to think; and all these states are held to be movements: which might lead one to infer that soul itself is moved. But this is no 11 necessary inference. For suppose it ever so true that to feel pain

Soph., egregie totum hunc locum explicavit Bon., Hermes VII, p. 435 || δ] ᾧ coni. Barco, assentitur Susemihl, Oecon. p. 84 || ἀπολειπούσης TVXY Them., ἀπολειπούσης in paraphr. Simpl. Philop. 153, 4 Soph. v. 1. (ἀπολειπούσης e codd. Hayduck 26, 37) || 408 b, 3. τε om. V || 5. de hoc loco el γὰρ...11. τὸ δὲ vide Bon., stud. Arist. II, III. p. 22 sqq., quem in textu restituendo secutus est Biehl, etiam Rodier, nisi quod a verbis b, 9. τούτων δὲ parenth. incipere maluit Rodier.

σθαι ἢ χαιρεῖν ἢ διανοεῖσθαι κινήσεις εἰσὶ καὶ ἕκαστον κινεῖσθαι τούτων, τὸ δὲ κινεῖσθαι ἐστὶν ὑπὸ τῆς ψυχῆς, οἷον τὸ ὀργίζεσθαι ἢ φοβεῖσθαι τὸ τὴν καρδίαν ὥδι κινεῖσθαι, τὸ δὲ διανοεῖσθαι ἢ τὸ τοῦτο ἴσως ἢ ἕτερόν τι, τούτων δὲ συμβαίνει τὰ μὲν κατὰ φοράν τινῶν κινουμένων, τὰ δὲ κατὰ 10  
 12 ἀλλοίωσιν (ποῖα δὲ καὶ πῶς, ἕτερός ἐστι λόγος). τὸ δὲ λέγειν ὀργίζεσθαι τὴν ψυχὴν ὁμοίον κἂν εἴ τις λέγοι τὴν ψυχὴν ὑφαίνειν ἢ οἰκοδομεῖν· βέλτιον γὰρ ἴσως μὴ λέγειν τὴν ψυχὴν ἐλεεῖν ἢ μανθάνειν ἢ διανοεῖσθαι, ἀλλὰ τὸν ἄνθρωπον τῇ ψυχῇ· τοῦτο δὲ μὴ ὡς ἐν ἐκείνῃ τῆς κινήσεως οὔσης, 15  
 ἀλλ' ὅτε μὲν μέχρι ἐκείνης, ὅτε δ' ἀπ' ἐκείνης, οἷον ἢ μὲν αἰσθησις ἀπὸ τωνδὶ, ἢ δ' ἀνάμνησις ἀπ' ἐκείνης ἐπὶ τὰς ἐν  
 13 τοῖς αἰσθητηρίοις κινήσεις ἢ μονάς. ὁ δὲ νοῦς ἔοικεν ἐγγίνεσθαι οὐσία τις οὔσα, καὶ οὐ φθείρεσθαι. μάλιστα γὰρ ἐφθείρετ' ἂν ὑπὸ τῆς ἐν τῷ γήρᾳ ἀμαυρώσεως, νῦν δ' ἴσως ὅπερ ἐπὶ 20  
 τῶν αἰσθητηρίων συμβαίνει· εἰ γὰρ λάβοι ὁ πρεσβύτης ὄμμα τοιονδί, βλέποι ἂν ὥσπερ καὶ ὁ νέος. ὥστε τὸ γήρας οὐ τῷ τὴν ψυχὴν τι πεπονθέναι, ἀλλ' ἐν ᾧ, καθάπερ ἐν μέ-  
 14 θαις καὶ νόσοις. καὶ τὸ νοεῖν δὴ καὶ τὸ θεωρεῖν μαραίνεται ἄλλου τινὸς ἔσω φθειρομένου, αὐτὸ δὲ ἀπαθές ἐστίν. τὸ δὲ δια- 25  
 νοεῖσθαι καὶ φιλεῖν ἢ μισεῖν οὐκ ἐστὶν ἐκείνου πάθη, ἀλλὰ τοῦ δι τοῦ ἔχοντος ἐκεῖνο, ᾧ ἐκεῖνο ἔχει. διὸ καὶ τούτου φθειρομένου οὔτε μνημονεύει οὔτε φιλεῖ· οὐ γὰρ ἐκείνου ᾗ, ἀλλὰ τοῦ κοινοῦ, ὃ ἀπόλωλεν· ὁ δὲ νοῦς ἴσως θειότερόν τι καὶ ἀπαθές ἐστίν.  
 15 ὅτι μὲν οὖν οὐχ οἷόν τε κινεῖσθαι τὴν ψυχὴν, φανερόν 30  
 ἐκ τούτων· εἰ δ' ὅλως μὴ κινεῖται, δῆλον ὡς οὐδ' ὑφ' ἑαυτῆς.  
 16 πολὺ δὲ τῶν εἰρημένων ἀλογώτατον τὸ λέγειν ἀριθμὸν εἶναι τὴν ψυχὴν κινουμένην ἑαυτὸν· ὑπάρχει γὰρ αὐτοῖς ἀδύνατα

7. pro δὲ conī. δὴ, quod probat Essen, et a verbis τὸ δὴ apodosin incipere vult Susemihl || 8. τὸ τὴν κ. V Bon., reliqui ante Bon. omnes τῷ τὴν κ. || 9. ἢ τοιοῦτον libri scripti et ante Biehlium impressi omnes, etiam Philop., ἢ τῷ τούτο conī. Torst., ἢ τὸ τοῦτο conī. Bon., quod recepit Biehl || τοῖσιν... 11. λόγος in parenth. Susemihl, Burs. Jahrb. IX, 351 Rodier || 11. ποῖα E, littera i inserta quidem sed aperte a prima manu (Trendl.), etiam Philop. || (ποῖα...λόγος) in parenth. Bon. || τὸ δὲ ST Bon., qui ab his verbis apodosin incipit ad 5. εἰ γὰρ, quod iam Philop. diserte fecerat 156, 10 sq., τὸ δὲ reliqui ante Bon. omnes, etiam Philop. || 15. οὔσης om. pr. E, sed ab antiqua manu insertum (Trendl.) || 16. μέχρις TVWX Philop. || 18. ὁ δὲ... 29. ἐστὶν alieno loco inserta censet B. Ritter, Grundprinc. d. Arist. Seelenl. p. 29, cui assentitur Susemihl || 19. οὔσα om. pr. E, sed ab antiqua manu insertum (Trendl.), leg. etiam Them. Philop. (excepto Philop. cod. D) || 20. νῦν δ' ὥσπερ STVWX γ, ὥσπερ etiam Soph., νῦν δὲ ὅπερ Them. 29, 26 ||

or joy and to think are movements, that to experience each of these is to be moved and that the movement is due to the soul: suppose that to be angry, for instance, or to be afraid means a particular movement of the heart, and that to think means a movement of this or of some other part, some of these movements being movements of locomotion, others of qualitative change (of what sort and how produced does not concern us here): yet, <sup>12</sup> even then, to speak of the soul as feeling anger is as if one should say that the soul weaves or builds. Doubtless it would be better not to say that the soul pities or learns or thinks, but that the man does so with the soul: and this, too, not in the sense that the motion occurs in the soul, but in the sense that motion sometimes reaches to, sometimes starts from, the soul. Thus, sensation originates in particular objects, while recollection, starting from the soul, is directed towards the movements or traces of movements in the sense-organs. But intellect would seem to be developed <sup>13</sup> in us as a self-existing substance and to be imperishable. For, if anything could destroy it, it would be the feebleness of age. But, as things are, no doubt what occurs is the same as in the case of the sense-organs. If an aged man could procure an eye of the right sort, he would see just as well as a young man. Hence old age must be due to an affection or state not of the soul as such, but of that in which the soul resides, just as is the case in intoxication and disease. In like manner, then, thought <sup>14</sup> and the exercise of knowledge are enfeebled through the loss of something else within, but are in themselves impassive. But reasoning, love and hatred are not attributes of the thinking faculty but of its individual possessor, in so far as he possesses it. Hence when this possessor perishes, there is neither memory nor love: for these never did belong to the thinking faculty, but to the composite whole which has perished, while the intellect is doubtless a thing more divine and is impassive.

From the foregoing it is clear that the soul is incapable of <sup>15</sup> motion; and, if it is not moved at all, clearly it does not move itself. Now of all the views that have been put forward <sup>16</sup> by far the most irrational is that which makes the soul a self-moving number. Its supporters are involved in

22. E superscr. *ὅλον νέος* post *τοιοῦδι* est interpretamentum (Bhl.) || 23. *πεπονημένοι τι τὴν ψυχὴν* VW y Philop., *τὴν ψυχὴν πεπονημένοι* S Them. 29, 29 || 25. *ἔσω*] *ἔξω* conl. Steinhart, *ἐν* *ᾧ* conl. Bon., cf. Susemihl, Burs. Jahr. XVII, 264, adn. 24, *ἔσω* tuentur etiam Simpl. p. 60, 30 Philop. Soph., *ἐσω* Them. 29, 30 et 30, 14, *ἔσω* retineri volunt etiam Zeller, Gesch. d. Ph. d. Gr. II, 2, p. 570 et Neuhäuser, Arist. Lehre von dem sinnl. Erkenntnisvermögen, p. 12.

πρῶτα μὲν τὰ ἐκ τοῦ κινεῖσθαι συμβαίνοντα, ἴδια δ' ἐκ τοῦ  
 λέγειν αὐτὴν ἀριθμόν. πῶς γὰρ χρή νοῆσαι μονάδα κινου- 409a  
 μένην, καὶ ὑπὸ τίνος, καὶ πῶς, ἀμερῇ καὶ ἀδιάφορον οὐ-  
 17 σαν; εἰ γάρ ἐστι κινήτικὴ καὶ κινήτῃ, διαφέρειν δεῖ. ἔτι δ'  
 ἐπεὶ φασι κινήθεισαν γραμμὴν ἐπίπεδον ποιεῖν, στιγμὴν δὲ  
 γραμμὴν, καὶ αἱ τῶν μονάδων κινήσεις γραμμαὶ ἔσονται· 5  
 ἡ γὰρ στιγμή μονάς ἐστι θέσιν ἔχουσα· ὁ δ' ἀριθμὸς τῆς  
 18 ψυχῆς ἤδη πού ἐστι καὶ θέσιν ἔχει. ἔτι δ' ἀριθμοῦ μὲν ἔαν  
 ἀφέλῃ τις ἀριθμὸν ἢ μονάδα, λείπεται ἄλλος ἀριθμὸς·  
 τὰ δὲ φυτὰ καὶ τῶν ζώων πολλὰ διαιρούμενα ζῇ καὶ δο-  
 19 κεῖ τὴν αὐτὴν ψυχὴν ἔχειν τῷ εἶδει. δόξειε δ' ἂν οὐθὲν δια- 10  
 φέρειν μονάδας λέγειν ἢ σωματῖα μικρά· καὶ γὰρ ἐκ τῶν  
 Δημοκρίτου σφαιρίων ἔαν γένωνται στιγμαί, μόνον δὲ μένη  
 τὸ ποσόν, ἔσται τι ἐν αὐτῷ τὸ μὲν κινοῦν τὸ δὲ κινούμενοι,  
 ὥσπερ ἐν τῷ συνεχεῖ· οὐ γὰρ διὰ τὸ μεγέθει διαφέρειν ἢ  
 μικρότητι συμβαίνει τὸ λεχθέν, ἀλλ' ὅτι ποσόν. διὸ ἀναγ- 15  
 καῖον εἶναί τι τὸ κινήσον τὰς μονάδας. εἰ δ' ἐν τῷ ζῳῷ τὸ  
 κινοῦν ἢ ψυχῇ, καὶ ἐν τῷ ἀριθμῷ, ὥστε οὐ τὸ κινοῦν καὶ τὸ  
 20 κινούμενον ἢ ψυχῇ, ἀλλὰ τὸ κινοῦν μόνον. ἐνδέχεται δὲ δὴ  
 πῶς μονάδα ταύτην εἶναι; δεῖ γὰρ ὑπάρχειν τινὰ αὐτῇ  
 διαφορὰν πρὸς τὰς ἄλλας. στιγμής δὲ μοναδικῆς τίς ἂν εἴη 20  
 διαφορὰ πλὴν θέσις; εἰ μὲν οὖν εἰσὶν ἕτεραι αἱ ἐν τῷ σώματι  
 μονάδες καὶ αἱ στιγμαί, ἐν τῷ αὐτῷ ἔσονται αἱ μονάδες·  
 καθέξει γὰρ χώραν στιγμής. καίτοι τί κωλύει ἐν τῷ αὐτῷ  
 εἶναι, εἰ δύο, καὶ ἀπείρους; ὧν γὰρ ὁ τόπος ἀδιαίρετος,  
 21 καὶ αὐτά. εἰ δ' αἱ ἐν τῷ σώματι στιγμαὶ ὁ ἀριθμὸς ὁ τῆς 25  
 ψυχῆς, ἢ εἰ ὁ τῶν ἐν τῷ σώματι στιγμῶν ἀριθμὸς ἢ  
 ψυχῇ, διὰ τί οὐ πάντα ψυχὴν ἔχουσι τὰ σώματα; στιγμαὶ

34. ἴδια E (Bus.) Simpl. p. 65, 17 Soph. et, ut videtur, Philop. 165, 31, receperunt Biehl  
 Rodier, ἴδια reliqui et scripti et ante Biehlium impressi omnes, etiam Them., ἴδια defendit  
 Vahlen in ed. art. poet. text. 119 || 409 a, 3. εἰ γάρ] ἢ γάρ T, ἢ γάρ X, ἢ μὲν γάρ Soph. 29,  
 21 || 10. αὐτὴν om. E || ἔχειν ψυχὴν S T U V y Them. || 11. σμικρά S T Them., μικρά etiam  
 Soph. || 12. σφαιρίων T X et rc. E, σφαιρίων reliqui codd. et, ut videtur, pr. E (Trend.) || 13.  
 αὐτῷ] αὐταῖς Soph. 30, 9 || post κινούμενον virgulam deleuit Torst. || 14. συνεχεῖ] μεγέθει  
 T W y Soph. || 15. σμικρότητι plerique codd., etiam Them. Soph., μικρότητι E (Stapf.)  
 Bek. Trend. Torst. || 16. κινήσαν T W y, κινήσον etiam Soph. || 17. ὥστε] πρώτως γε coni.  
 Essen || τὸ post καὶ om. S U W X y || 18. δὲ om. S V W X y, leg. Them. || 19. πῶς Them.  
 Trend. Torst., πως (enclit.) et post εἶναι colon Bek. || ταύτην] αὐτὴν T X, etiam Philop.  
 168, 16 || 22. καὶ αἱ] καὶ S U V W y, ἢ T et rc. E, καὶ αἱ pr. E (Trend.), ἕτεραι αἱ ἐν τῷ  
 σώματι στιγμαὶ καὶ αἱ μονάδες coni. Christ || 23. κωλύει V W Them. Trend., κωλύει



many impossibilities, not only in those which arise from attributing motion to the soul, but also in others of a special character due to calling it a number. For how are we to conceive of a unit, a thing which is without parts or differences, as in motion? By what would it be moved, and in what way? For if it is capable of imparting motion as well as of being moved, it must admit differences. Further, since they say that a line by its motion gene- 17 rates a surface and that a point by its motion generates a line, the movements of the units will also be lines, for a point is a unit having position. But the number of the soul must, from the nature of the case, be somewhere and have position. Again, if 18 you subtract a number or unit from a number, a different number remains: whereas plants and many animals continue to live when divided and seem to have specifically the same soul in each segment. Besides, it would seem to make no difference whether we 19 say units or tiny particles. For if the little round atoms of Democritus be converted into points and only their sum-total be retained, in such sum-total there will still be a part which moves and a part which is moved, just as there is in that which is extended. The truth of this statement does not depend upon the size of the atoms, whether great or small, but upon the fact that there is a sum-total or quantity of them. Hence there must be something to set the units in motion. But if in the animal the part which causes motion is the soul, then it is so likewise in the number: so that it will not be both that which causes motion and that which is moved which is the soul, but that which causes motion only. How then can this cause of motion be a unit? 20 For if it were so there must be some difference between it and the other units. But what is there to differentiate points which are units, except position? If, then, the units, that is the points, in the body are distinct from the units of soul, the units of soul will be in the same place as the points, for each unit will occupy the space of a point. And yet if two things can be in the same place, why not an infinite number? When the place which things occupy is indivisible, the things themselves are also indivisible. If, on the other hand, the number of the soul consists of the 21 points in the body, or if the soul is the number of such points, why are not all bodies possessed of soul? For in all bodies there

etiam Simpl. Soph. || 25.  $\delta$  prius om. X, alterum insert. E<sub>2</sub> || 26.  $\delta$   $\tau\omega\nu$  E Them. Philop. 171, 12 Simpl. Soph., recepit Biehl, ceteri et scripti et ante Biehlum impressi omnes  $\delta$   $\epsilon\kappa$   $\tau\omega\nu$ , etiam Philop. in lemmate 171, 6,  $\epsilon\kappa$  insert. E<sub>2</sub>.

22 γὰρ ἐν ᾧ πασι δοκοῦσιν εἶναι καὶ ἄπειροι. ἔτι δὲ πῶς οἶόν τε χωρίζεσθαι τὰς στιγμὰς καὶ ἀπολύεσθαι τῶν σωμάτων, εἴ γε μὴ διαιροῦνται αἱ γραμμαὶ εἰς στιγμὰς; 30

- 5 Συμβαίνει δέ, καθάπερ εἵπομεν, τῇ μὲν ταῦτο λέγειν τοῖς σῶμά τι λεπτομερές αὐτὴν τιθεῖσι, τῇ δ', ὥσπερ Δημόκριτος κινεῖσθαι φησιν ὑπὸ τῆς ψυχῆς, ἴδιον τὸ ἄτοπον. 409b  
εἵπερ γὰρ ἐστὶν ἡ ψυχὴ ἐν παντὶ τῷ αἰσθανομένῳ σώματι, ἀναγκαῖον ἐν τῷ αὐτῷ δύο εἶναι σώματα, εἰ σῶμά τι ἡ ψυχὴ· τοῖς δ' ἀριθμὸν λέγουσιν, ἐν τῇ μιᾷ στιγμή πολ-  
λὰς στιγμὰς, ἥ πᾶν σῶμα ψυχὴν ἔχειν, εἰ μὴ διαφέρων 5  
τις ἀριθμὸς ἐγγίνεται καὶ ἄλλος τις τῶν ὑπαρχουσῶν ἐν  
2 τοῖς σώμασι στιγμῶν. συμβαίνει τε κινεῖσθαι τὸ ζῶον ὑπὸ τοῦ ἀριθμοῦ, καθάπερ καὶ Δημόκριτον αὐτὸ ἔφαμεν κινεῖν· τί γὰρ διαφέρει σφαίρας λέγειν μικρὰς ἢ μονάδας μεγά-  
λας, ἢ ὅλως μονάδας φερομένας; ἀμφοτέρως γὰρ ἀναγ- 10  
3 καὶ οὖν κινεῖν τὸ ζῶον τῷ κινεῖσθαι ταύτας. τοῖς δὲ συμπλέ-  
ξασιν εἰς τὸ αὐτὸ κίνησιν καὶ ἀριθμὸν ταυτὰ τε συμβαίνει καὶ πολλὰ ἕτερα τοιαῦτα· οὐ γὰρ μόνον ὀρισμὸν ψυχῆς ἀδύνατον τοιοῦτον εἶναι, ἀλλὰ καὶ συμβεβηκός. δῆλον δ' εἶ-  
τις ἐπιχειρήσειεν ἐκ τοῦ λόγου τούτου τὰ πάθη καὶ τὰ ἔργα 15  
τῆς ψυχῆς ἀποδιδόναι, οἷον λογισμούς, αἰσθήσεις, ἡδονάς, λύπας, ὅσα ἄλλα τοιαῦτα· ὥσπερ γὰρ εἵπομεν πρότερον, οὐδὲ μαντεύσασθαι ῥᾶδιον ἐξ αὐτῶν.  
4 τριῶν δὲ τρόπων παραδεδομένων καθ' οὓς ὀρίζονται τὴν ψυ-  
χὴν, οἱ μὲν τὸ κινητικώτατον ἀπεφάνησαν τῷ κινεῖν ἑαυτόν, οἱ δὲ 20  
σῶμα τὸ λεπτομερέστατον ἢ τὸ ἀσωματώτατον τῶν ἄλλων. ταῦτα δὲ τίνας ἀπορίας τε καὶ ὑπεναντιώσεις ἔχει, διεληλύθα-  
5 μεν σχεδόν. λείπεται δ' ἐπισκέψασθαι πῶς λέγεται τὸ ἐκ τῶν

29. ψυχὰς STU, στιγμὰς E (Bus.) et VWXY Soph. vet. transl. et, ut videtur, Philop. 171, 21, Torst. || 30. γε om. E || eis τὰς στ. TW || 31. falso hic incipitur novum caput || δὲ καὶ καθ. E, pro δὲ coni. δὴ Susemihl || 409 b, 1. ἴδιον om. S, τὸ om. X, verba ἴδιον τὸ ἄτοπον unc. incl. Torst., legerunt Philop. et sine dubio Them. et Simpl., tuetur Vahlen in ed. art. poet. tert. 119, non legisse videtur Soph. 31, 6 || 2. περ om. pr. E || σώματι om. Wy, leg. Philop. Soph. || 5. pro ἡ coni. Torst. καὶ, ἢ in interpr. Simpl. Philop. 172, 25 sqq., defendit ἡ Dittenberger, Gött. gelehrte Anz. 1863, p. 1615 || 7. τοῖς σώμασι E Torst., reliqui ante Torst. omnes τῷ σώματι || συμβαίνει E (Bek.), συμβαίνει E (Bus.) || τε] δὲ UX, om. S. || 8. αὐτὸ ἔφαμεν EX, receperunt Biehl Rodier, ἔφαμεν αὐτὸ reliqui et scripti et impressi || 9. μικρὰς E (Bus.) y, reliqui ante Biehlum omnes σμικρὰς || 11. ταύτας || 12. μαντεύεσθαι STUVWY,

would seem to be points: nay, an infinity of points. And, further, 22 how can the points be separated and set free from the bodies to which they belong; unless, indeed, we are prepared to resolve lines into points?

It comes to this, then, as we have said, first, that this view 5  
 The ob- coincides with that which makes of the soul a body  
 jections recapitu- composed of fine particles; next, that its agreement  
 lated. with Democritus as to the manner in which he makes  
 the body to be moved by the soul gives it an especial absurdity of  
 its own. If the soul resides in the whole sentient body, on the  
 assumption that the soul is a sort of body it necessarily follows  
 that two bodies occupy the same space. Those who call the soul  
 a number have to assume many points in the one point, or else  
 that everything corporeal has a soul; unless the number that  
 comes to exist in the body is a different number, quite distinct  
 from the sum of the points already present in the body. Hence it 2  
 follows that the animal is moved by the number in the same way  
 precisely as we said Democritus moved it. For what difference  
 does it make whether we speak of small round atoms or large  
 units, or indeed of units in spatial motion at all? Either way it is  
 necessary to make the motion of the animal depend on the motion  
 of these atoms or units. Such, then, are some of the difficulties 3  
 confronting those who join motion and number: and there are  
 many others, since it is impossible that the conjunction of motion  
 with number should form even an attribute, much less the defi-  
 nition, of soul. This will be evident if we try to deduce from this  
 definition the affections and functions of the soul; its reasonings,  
 perceptions, pleasures, pains, and so forth. For, as we said above,  
 from the account given it is difficult even to divine what these  
 functions are.

Three modes of defining the soul have come down to us: 4  
 some defined it as that which, in virtue of its self-motion, is most  
 capable of causing motion; others as the body which consists of  
 the finest particles, or which is more nearly incorporeal than any-  
 thing else. And we have pretty fully explained what difficulties  
 and inconsistencies these views present. It remains to consider 5  
 what is meant by saying that the soul is composed of the

*μαντεύσασθαι* etiam Them. Soph. et, ut videtur, Philop. 175, 1 || 20. *οἱ μὲν...23. σχεδόν*  
 in parenth. et post 21. *ἄλλων* colon pro vulg. punct. posuit Rodier || 20. *ἐαυτῷ ἐαυτήν*  
 Soph. || 22. *τε* om. V W Philop.

στοιχείων αὐτὴν εἶναι. λέγουσι μὲν γάρ, ἵν' αἰσθάνηται τε τῶν ὄντων καὶ ἕκαστον γνωρίζῃ, ἀναγκαῖον δὲ συμβαίνειν 25 πολλὰ καὶ ἀδύνατα τῷ λόγῳ. τίθενται γὰρ γνωρίζειν τῷ ὁμοίῳ τὸ ὅμοιον, ὥσπερ ἂν εἰ τὴν ψυχὴν τὰ πράγματα τιθέentes. οὐκ ἔστι δὲ μόνα ταῦτα, πολλὰ δὲ καὶ ἕτερα, 6 μᾶλλον δ' ἴσως ἄπειρα τὸν ἀριθμὸν τὰ ἐκ τούτων. ἐξ ὧν μὲν οὖν ἐστὶν ἕκαστον τούτων, ἔστω γινώσκειν τὴν ψυχὴν καὶ 30 αἰσθάνεσθαι· ἀλλὰ τὸ σύνολον τίτι γνωριεῖ ἢ αἰσθήσεται, οἷον τί θεὸς ἢ ἄνθρωπος ἢ σὰρξ ἢ ὅστων; ὁμοίως δὲ καὶ ἄλλο ὅτιον τῶν συνθέτων· οὐ γὰρ ὅπως οὖν ἔχοντα τὰ 410a στοιχεῖα τούτων ἕκαστον, ἀλλὰ λόγῳ τινὶ καὶ συνθέσει, καθάπερ φησὶ καὶ Ἐμπεδοκλῆς τὸ ὅστων·

ἡ δὲ χθὼν ἐπίηρος ἐν εὐστέροισι χοάνοισιν

τῷ δύο τῶν ὀκτῶ μερέων λάχε νηστιδος αἴγλης,

5

τέσσαρα δ' Ἐφαιύτοιο· τὰ δ' ὅστέα λευκὰ γένοιτο.

οὐδὲν οὖν ὄφελος ἐνεῖναι τὰ στοιχεῖα ἐν τῇ ψυχῇ, εἰ μὴ καὶ οἱ λόγοι ἐνέσονται καὶ ἡ σύνθεσις· γνωριεῖ γὰρ ἕκαστον τὸ ὅμοιον, τὸ δ' ὅστων ἢ τὸν ἄνθρωπον οὐθέν, εἰ μὴ καὶ ταῦτ' ἐνέσται. τοῦτο δ' ὅτι ἀδύνατον, οὐθέν δεῖ λέγειν· τίς γὰρ ἂν 10 ἀπορήσειεν εἰ ἐνεστὶν ἐν τῇ ψυχῇ λίθος ἢ ἄνθρωπος; ὁμοίως δὲ καὶ τὸ ἀγαθὸν καὶ τὸ μὴ ἀγαθόν· τὸν αὐτὸν δὲ τρόπον 7 καὶ περὶ τῶν ἄλλων. ἔτι δὲ πολλαχῶς λεγομένου τοῦ ὄντος (σημαίνει γὰρ τὸ μὲν τόδε τι, τὸ δὲ ποσὸν ἢ ποιὸν ἢ καὶ 15 τινα ἄλλην τῶν διαιρεθεισῶν κατηγοριῶν) πότερον ἐξ ἀπάντων ἔσται ἡ ψυχὴ ἢ οὐ; ἀλλ' οὐ δοκεῖ κοινὰ πάντων εἶναι στοιχεῖα. ἂρ' οὖν ὅσα τῶν οὐσιῶν, ἐκ τούτων μόνον; πῶς οὖν γινώσκει καὶ τῶν ἄλλων ἕκαστον; ἢ φήσουσιν ἐκάστου γένους εἶναι στοιχεῖα καὶ ἀρχὰς ἰδίας, ἐξ ὧν τὴν ψυχὴν συνεστά- 20 ναι; ἔσται ἄρα ποσὸν καὶ ποιὸν καὶ οὐσία. ἀλλ' ἀδύνατον ἐκ 20

24. ἵν' om. pr. E || αἰσθάνηται T W et corr. E (Trend.), αἰσθάνηται etiam Them. Soph. || 31. τίτι...ἢ] οὐ...οὐδ' W X || 410 a, 1. ὅτιον ἄλλο excerpto E omnes codd., etiam Soph. Trend. || 2. τούτων] τῶν pr. E (Trend.) || post ἕκαστον virg. om. Diels, p. 208 || 5. τὰ δύο V et rc. E Bek. Trend., τὰς δύο W et Alex. in metaph. p. 135, 16 (ed. Hayduck), τὰ δύο, quod iam Steinhart coniecerat, scripserunt Torst. Biehl in ed. pr. Rodier Diels, Herm. XV, 166 sqq., τῶν δύο S T U X y et pr. E (Bhl.), etiam Them. Philop. Soph., scripsit Biehl in ed. alt. || μοιράων U V W y et rc. E Philop., μερέων ut videtur pr. E (Trend.) et Alex. l. 1. Them. Soph. || 6. λεύκ' S U X Alex. l. 1. Them. Soph. Bek. Trend. || ἐγένοντο S U X, Alex. Them. Soph. Bek. Trend., γέγοντο nunc E, sed ante γ est una littera erasa (Bhl.) || 7. ἐνεῖναι solus E<sub>1</sub> Torst., ceteri codd. εἶναι, etiam Soph. || 11. ἐστὶν U W X, ἐνεστὶν

elements. Soul, we are told, is composed of the elements in order that it may perceive and know each several thing. But this theory necessarily involves many impossibilities. For it is assumed that like is known by like; which implies that soul is identical with the things that it knows. These elements, however, are not all that exists: there are a great, or perhaps we should say rather, an infinite number of other things as well, namely, those which are compounded of the elements. Granted, then, that it is possible for the soul to know and to 6 perceive the constituent elements of all these composite things, with what will it know or perceive the compound itself? I mean, what God or man is; what flesh or bone is: and so likewise with regard to any other composite thing. For it is not elements taken anyhow which constitute this or that thing, but only those which are united in a given proportion or combination, as Empedocles says of bone:—

“Then did the bounteous earth in broad-bosomed crucibles win out of eight parts two from the sheen of moisture and four from the fire-god; and the bones came into being all white.”

It is therefore of no use for the elements to be in the soul, unless it also contains their proportions and the mode of combining them. For each element will know its like, but there will be nothing to know bone or man, unless these also are to be present in the soul: which, I need hardly say, is impossible. Who would ask if stone or man resides in the soul? And similarly with that which is good and that which is not good: and so for all the rest.

Being, again, is a term which has various meanings, signifying 7 sometimes the particular thing, sometimes quantity or quality or any other of the categories which have been already determined. Is the soul to be derived from all of these, or not? It cannot be: the general opinion is that there are no elements common to all the categories. Does the soul, then, consist of those elements alone which are the elements of substances? How then does it know each of the other categories? Or will they say that each summum genus has special elements and principles of its own, and that the soul is composed of these? Then soul will be at once quantity, quality and substance. But it is impossible from the elements of

etiam Soph. || δμολως...12. μὴ ἀγαθόν unc. incl. Susemihl || 13. ἐπὶ τῶν TX Simpl. || 17. τὰ στοιχ. Ey; τὰ om. Them. 33, 30 Soph. || post οὐσιῶν virgulam om. Bek. Trend. || μόνων STUVX || 20. ἔσται...οὐσία Torst. suspecta sunt, agnoscunt haec verba et eodem quidem loco Philop. 179, 3 sq. Simpl. Soph., post 21. πᾶσιν posuit Belger.

τῶν τοῦ ποσοῦ στοιχείων οὐσίαν εἶναι καὶ μὴ ποσόν. τοῖς δὴ  
λέγουσιν ἐκ πάντων ταῦτά τε καὶ τοιαῦθ' ἕτερα συμβαίνει.  
8 ἄτοπον δὲ καὶ τὸ φάναι μὲν ἀπαθὲς εἶναι τὸ ὅμοιον ὑπὸ τοῦ  
ὁμοίου, αἰσθάνεσθαι δὲ τὸ ὅμοιον τοῦ ὁμοίου καὶ γινώσκειν  
τῷ ὁμοίῳ τὸ ὅμοιον· τὸ δ' αἰσθάνεσθαι πάσχειν τι καὶ κι- 25  
νεῖσθαι τιθέασιν· ὁμοίως δὲ καὶ τὸ νοεῖν τε καὶ γινώσκειν.  
9 πολλὰς δ' ἀπορίας καὶ δυσχερείας ἔχοντος τοῦ λέγειν, κα-  
θάπερ Ἐμπεδοκλῆς, ὥς τοῖς σωματικοῖς στοιχείοις ἕκαστα  
γνωρίζεται, καὶ πρὸς τὸ ὅμοιον [μαρτυρεῖ τὸ νῦν λεχθέν].  
ὅσα γὰρ ἔστιν ἐν τοῖς τῶν ζώων σώμασιν ἀπλῶς γῆς, οἷον 30  
ὁσῶτα νεῦρα τρίχες, οὐθενὸς αἰσθάνεσθαι δοκεῖ, ὥστ' οὐδὲ τῶν 410b  
10 ὁμοίων· καίτοι προσῆκεν. ἔτι δ' ἐκάστη τῶν ἀρχῶν ἄγνοια  
πλείων ἢ σύνεσις ὑπάρξει· γινώσκεται μὲν γὰρ ἐν ἑκαστον,  
πολλὰ δ' ἀγνοήσει· πάντα γὰρ τᾶλλα. συμβαίνει δ' Ἐμ-  
πεδοκλεῖ γε καὶ ἀφρονέστατον εἶναι τὸν θεόν· μόνος γὰρ τῶν 5  
στοιχείων ἐν οὐ γνωρίζει, τὸ νεῖκος, τὰ δὲ θνητὰ πάντα· ἐκ  
11 πάντων γὰρ ἕκαστον. ὅλως τε διὰ τίν' αἰτίαν οὐχ ἅπαντα  
ψυχὴν ἔχει τὰ ὄντα, ἐπειδὴ πᾶν ἥτοι στοιχεῖον ἢ ἐκ στοιχείου  
ένὸς ἢ πλειόνων ἢ πάντων; ἀναγκαῖον γὰρ ἔστιν ἐν τι γι-  
12 νώσκειν ἢ τινὰ ἢ πάντα. ἀπορήσειε δ' ἂν τις καὶ τί ποτ' 10  
ἔστι τὸ ἐνοποιοῦν αὐτά· ὕλη γὰρ ἔοικε τά γε στοιχεῖα· κυ-  
ριώτατον γὰρ ἐκείνο τὸ συνέχον ὃ τί ποτ' ἔστιν· τῆς δὲ ψυ-  
χῆς εἶναι τι κρεῖττον καὶ ἄρχον ἀδύνατον· ἀδυνατώτερον δ'  
ἔτι τοῦ νοῦ· εὐλογον γὰρ τοῦτον εἶναι προγενέστατον καὶ κύριον  
κατὰ φύσιν, τὰ δὲ στοιχεῖα φασὶ πρῶτα τῶν ὄντων εἶναι. 15  
13 πάντες δὲ καὶ οἱ διὰ τὸ γνωρίζειν καὶ αἰσθάνεσθαι τὰ ὄντα  
τὴν ψυχὴν ἐκ τῶν στοιχείων λέγοντες αὐτήν, καὶ οἱ τὸ κι-

25. δ'] γὰρ T X Susemihl Philop. in interpr. 180, 5, Rodier || τε E Soph., reliqui τι, etiam Philop. 181, 4 || κινεῖν E, ποιεῖν U X || 26. τε om. E, τι V, leg. τε etiam Soph. || 29. πρὸς τὸ ὅμοιον] sic omnes codd., "et ad simile" vet. transl., pro his τῷ ὁμοίῳ τὸ ὅμοιον scripsit Torst. Sophoniam secutus || post πρὸς virgulam posuit, post ὅμοιον sustulit Rodier || λεχθὲν ὁμοίον T et corr. U y, Soph. interpretatur τὰ ἐξ ἧς λεχθσόμενα, λεχθέν etiam Simpl. 70, 8 Philop. 180, 23, quorum uterque λεχθσόμενον interpretatur, vet. transl., verba μαρτυρεῖ τὸ νῦν λεχθέν unc. inclusit Torst., probat Susemihl || 30. ἐνεστιν ST U V Bek. Trend., ἐστιν etiam Philop. Soph. Torst. || 410 b, 2. προσῆκεν τὰ νεῦρα καὶ τὰς τρίχας γενητὰ ὄντα τῶν ὁμοίων αἰσθάνεσθαι. ἔτι W, de his nihil veteres interpretes || 3. πλεον S U V W X y Soph., πλείων etiam Them. || ὑπάρχει W X || ἐκάστη T W X Soph. || 4. πάντα γὰρ τᾶλλα om. pr. E, leg. Them. et sine dubio Soph., Dittenberger, Gött. gel. Anz., 1863, p. 1614, ut superflua omitti vult || 6. γνωρίζει solus E Torst., cui assentitur Noetel, Zeitschr. f. Gym. 1864, p. 141, reliqui ante Torst. omnes γνωρίζει, etiam Them. Soph. ||

quantity to derive substance or anything but quantity. These, then, and others like them are the difficulties which confront those who derive soul from all the elements. There is a further inconsistency in maintaining that like is unaffected by like and yet at the same time that like perceives like and knows like by like. But they assume that perceiving is a sort of being acted upon or moved. And the same holds of thinking and knowing.

Of the many problems and difficulties involved in holding with Empedocles that each thing is known through corporeal elements and by reference to its like [*what has just been said is evidence*].—For, it would seem, whatever within the bodies of animals consists entirely of earth, such as bones, sinews, hair, perceives nothing at all, and consequently cannot perceive its like; as in consistency it should. Moreover, each one of the elemental principles will have a far larger share of ignorance than of intelligence; there being many things of which it will be ignorant and only one which it will know: in fact, it will be ignorant of all besides that one. It follows, for Empedocles at any rate, that God is quite the most unintelligent of beings. There is one of the elements, viz. Strife, which he, and he alone, will not know, while mortal things, being composed of all the elements, will know them all. And in general, seeing that everything is either an element or derived from one or more or all elements, why should not all things that exist have soul? For they must certainly know one thing or some things or all. It might further be asked what it is that gives them unity. For the elements, at all events, correspond to matter. That other principle, whatever it be, which holds them together, is supreme. Yet it is impossible that anything should be superior to the soul and overrule it; and still more impossible that anything should overrule intelligence. This, it may reasonably be held, has a natural priority and authority. Yet we are told that the elements are prior to all other things that exist.

And it is characteristic, alike of those who derive the soul from the elements on the ground of perception and knowledge, and of those who define it as the thing most capable of causing motion,

ἐκ πάντων γὰρ ἕκαστον unc. incl. Torst., praeter omnes codd. tuentur haec verba Them. Soph. 34, 15, et, ut videtur, Philop. 181, 28 sq., defendit Dittenberger, Progr. Rudolstadt 1869, p. 19 || 7. δὲ S T U V W, τε etiam Them. et, ut videtur, Soph. 34, 15 || 8. πᾶν om. pr. E, leg. Soph., πάντα Them. || ἦτοι στοιχείων recepit Torst. ex solo E (Bus.), reliqui ante Torst. omnes ἢ στ., etiam Them. || 9. ἡ ἐκ πλ. T V W || ἐν τῷ E V S U X, ἡ ἐν W || 11. γε om. S T W X || 12. γὰρ E, sed in rasura, Bek. δ' subfuisse coni. (Trend.), γὰρ etiam ceteri codd. et Soph., δ' scripsit Torst. || 13. κρείσσον E W X.

νητικώτατον, οὐ περὶ πάσης λέγουσι ψυχῆς. οὔτε γὰρ τὰ  
 αἰσθανόμενα πάντα κινητικά· φαίνεται γὰρ εἶναι τινα μό-  
 νημα τῶν ζώων κατὰ τόπον· καίτοι δοκεῖ γε ταύτην μόνην 20  
 τῶν κινήσεων κινεῖν ἢ ψυχὴ τὸ ζῶον. ὁμοίως δὲ καὶ ὅσοι  
 τὸν νοῦν καὶ τὸ αἰσθητικὸν ἐκ τῶν στοιχείων ποιοῦσιν· φαίνεται  
 γὰρ τά τε φυτὰ ζῆν οὐ μετέχοντα φορᾶς οὐδ' αἰσθήσεως,  
 14 καὶ τῶν ζώων πολλὰ διάνοιαν οὐκ ἔχειν. εἰ δέ τις καὶ ταῦτα  
 παραχωρήσειε καὶ θείη τὸν νοῦν μέρος τι τῆς ψυχῆς, ὁμοίως 25  
 δὲ καὶ τὸ αἰσθητικόν, οὐδ' ἂν οὕτω λέγοιεν καθόλου περὶ  
 15 πάσης ψυχῆς οὐδὲ περὶ ὅλης οὐδεμίας. τοῦτο δὲ πέπονθε  
 καὶ ὁ ἐν τοῖς Ὀρφικοῖς ἔπεσι καλουμένοις λόγος· φησὶ γὰρ  
 τὴν ψυχὴν ἐκ τοῦ ὅλου εἰσιέναι ἀναπνεόντων, φερομένην ὑπὸ  
 τῶν ἀνέμων. οὐχ οἷόν τε δὴ τοῖς φυτοῖς τοῦτο συμβαίνειν οὐδὲ 30  
 τῶν ζώων ἐνίοις, εἴπερ μὴ πάντα ἀναπνέουσιν· τοῦτο δὲ λέ- 411a  
 16 ληθε τοὺς οὕτως ὑπειληφότας. εἴ τε δεῖ τὴν ψυχὴν ἐκ τῶν  
 στοιχείων ποιεῖν, οὐθέν δεῖ ἐξ ἀπάντων· ἱκανὸν γὰρ θάτερον  
 μέρος τῆς ἐναντιώσεως ἑαυτοῦ τε κρίνειν καὶ τὸ ἀντικείμενον.  
 καὶ γὰρ τῷ εὐθεῖ καὶ αὐτὸ καὶ τὸ καμπύλον γινώσκομεν· 5  
 κριτὴς γὰρ ἀμφοῖν ὁ κανὼν, τὸ δὲ καμπύλον οὐθ' ἑαυτοῦ  
 17 οὔτε τοῦ εὐθέος. καὶ ἐν τῷ ὄλῳ δέ τινες αὐτὴν μεμείχθαί  
 φασιν, ὅθεν ἴσως καὶ Θालῆς ᾤθη πάντα πλήρη θεῶν εἶναι.  
 18 τοῦτο δ' ἔχει τινὰς ἀπορίας· διὰ τίνα γὰρ αἰτίαν ἐν μὲν τῷ  
 ἀέρι ἢ τῷ πυρὶ οὔσα ἢ ψυχὴ οὐ ποιεῖ ζῶον, ἐν δὲ τοῖς μει- 10  
 19 κτοῖς, καὶ ταῦτα βελτίων ἐν τούτοις εἶναι δοκοῦσα; ἐπιζητή-  
 σαιε γὰρ ἂν τις καὶ διὰ τίν' αἰτίαν ἢ ἐν τῷ ἀέρι ψυχὴ τῆς  
 20 ἐν τοῖς ζώοις βελτίων ἐστὶ καὶ ἀθανατωτέρα. συμβαίνει δ'  
 ἀμφοτέρως ἄτοπον καὶ παράλογον· καὶ γὰρ τὸ λέγειν  
 ζῶον τὸ πῦρ ἢ τὸν ἀέρα τῶν παραλογωτέρων ἐστί, καὶ τὸ 15

18. πάσης E Them. Philop., ἀπάσης ceteri codd. et Soph. || οὔτε] οὐδὲ coni. Steinhart ||  
 20. fortasse legendum μόνην annotat Trendl., μόνην < μόνη > coni. Susemihl, Oecum. 11. 84,  
 probat Rodier II, p. 154 || 22. τὸν νοῦν καὶ τὸ αἰσθητικὸν unc. incl. Torst., tuentur Them.  
 Philop. et Vahlen, Oester. Gym. Zeitschr. 1868, p. 20 || 23. φορᾶς οὐδ' unc. incl. Torst.,  
 leg. etiam Philop. Simpl. et sine dubio Them. || 26. οὕτω] οὕτοι Them. 35, 15 || καθόλου om.  
 T U V Torst., tuentur etiam Them. Simpl. et Vahlen l. l. p. 21 || 27. οὐδεμίας] οὐδὲ μᾶς  
 E T U V W Bek. Trendl., μᾶς (omisso οὐδὲ) Torst., οὐδὲ περὶ μᾶς S X Simpl. (cf. Soph.  
 35, 12 οὐδὲ περὶ ὅλης οὐδὲ περὶ μᾶς), οὐδεμῶς etiam Them. et sine dubio Philop., qui in  
 interpr. bis περὶ οὐδεμῶς ὅλης, semel περὶ μᾶς ὅλης, semel περὶ ὅλης μᾶς || τοῦτο δὲ...  
 411 a, 2. ὑπειληφότας post 411 a, 7. εὐθέος transponenda coni. Bywater, Journ. of Phil.  
 1888, p. 53 sq., cui assentitur Susemihl || 28. καλουμένοις ἔπεσι T V W y Them., καλουμένοις  
 om. S, καλούμενος Soph., λεγομένοις Philop. 186, 24 (sed in lemmate καλουμένοις) || λόγους



that their assertions do not apply to soul in every form. For not all sentient beings can cause motion; some animals are seen to be stationary in one place. And yet it is at all events a received view that this, namely, change of place, is the one form of motion which the soul imparts to the animal. Similarly with those who derive intelligence and the faculty of sense from the elements. For plants are found to live without any share in locomotion or sensation, and many animals to be destitute of thought. If we waive this point 14 and assume intellect to be a part of the soul, and the faculty of sense likewise, even then their statements would not apply generally to all soul, nor to the whole of any one soul. The account 15

The Orphic cosmogony.

given in the so-called Orphic poems is open to the same strictures. For the soul, it is there asserted, enters from the universe in the process of respiration, being borne upon the winds. Now it is impossible that this should be so with plants or even with some animals, seeing that they do not all respire: a point which the upholders of this theory have overlooked. And if the soul is to be constructed out of the elements, 16 there is no need to employ them all, the one of a pair of contraries being sufficient to discern both itself and its opposite. For by that which is straight we discern both the straight and the crooked, the carpenter's rule being the test of both. On the other hand that which is crooked is not a test of itself or of that which is straight.

There are some, too, who say that soul is interfused through- 17 out the universe: which is perhaps why Thales supposed all things to be full of gods. But this view presents 18 some difficulties. For why should the soul not produce an animal, when present in air or fire, and yet do so when present in the compounds of these elements: and that, too, though in the former case it is believed to be purer? One might 19 also enquire why the soul present in air is purer and more immortal than soul in animals. Whichever of the two suppositions 20 open to us we adopt is absurd and irrational. To speak of fire or air as an animal is very irrational; and on the other hand

Soul not diffused through the universe.

E<sub>1</sub>, λόγος corr. E<sub>2</sub> (Bhl.) || 30. δὲ T W X et corr. E Soph., δὴ reliqui et scripti et impressi et E<sub>1</sub> || 411 a, 1. δὴ E, δὲ etiam Simpl. et, ut videtur, Them. 35, 20 || 2. εἰ δὲ X Trend., εἴπερ S V W, εἴπερ δὲ T et nunc E, εἴ τε δὲ olim subfuisse nihil nisi coniectura Bekkeri (Trend.), εἴτε U Bek. Torst., εἰ καὶ in interpret. Simpl. || 8. ἴσως om. V Soph., leg. Simpl. || 9. τίνα μὲν γὰρ V y et corr. E, om. μὲν Them. || ἐν μὲν] μὲν om. S T V y, leg. Them. || 10. ἢ ἐν τῷ S T U || 11. βέλτιον E, βελτίων etiam Soph. || ἐπιζητήσῃ... 13. ἀθανατωτέρα in parenth. Torst. Susemihl || 12. γὰρ] δ' W X Soph. et, ut videtur, Philop. 189, 4, γὰρ reliqui, etiam rc. E, sed Bek. coni. fuisse γ' (Trend.) || 15. παραλόγων S U X, παραβολωτέρων Them. 36, 2, Philop. 189, 11 (sed in v. l. utriusque vulg.) || τὸ om. T V W.

21 μὴ λέγειν ζῶα ψυχῆς ἐνούσης ἄτοπον. ὑπολαβεῖν δ' εἰκόασιν  
εἶναι τὴν ψυχὴν ἐν τούτοις, ὅτι τὸ ὅλον τοῖς μορίοις ὁμοειδές·  
ὥστ' ἀναγκαῖον αὐτοῖς λέγειν καὶ τὴν ψυχὴν ὁμοειδῆ τοῖς  
μορίοις εἶναι, εἰ τῷ ἀπολαμβάνεσθαι τι τοῦ περιέχοντος ἐν  
τοῖς ζώοις ἔμψυχα τὰ ζῶα γίνεται. εἰ δ' ὁ μὲν ἀπὸρ διασπώ- 20  
μενος ὁμοειδής, ἡ δὲ ψυχὴ ἀνομοιομερής, τὸ μὲν τι αὐτῆς  
ὑπάρξει δηλὸν ὅτι, τὸ δ' οὐχ ὑπάρξει. ἀναγκαῖον οὖν αὐτὴν  
ἢ ὁμοιομερῆ εἶναι ἢ μὴ ἐνυπάρχειν ἐν ὁτῶν μορίῳ τοῦ παντός.

22 φανερόν οὖν ἐκ τῶν εἰρημένων ὡς οὔτε τὸ γινώσκειν ὑπάρ-  
χει τῇ ψυχῇ διὰ τὸ ἐκ τῶν στοιχείων εἶναι, οὔτε τὸ κινεῖ- 25  
σθαι αὐτὴν καλῶς οὐδ' ἀληθῶς λέγεται. ἐπεὶ δὲ τὸ γινώ-  
σκειν τῆς ψυχῆς ἐστὶ καὶ τὸ αἰσθάνεσθαι τε καὶ τὸ δοξά-  
ζειν, ἔτι δὲ τὸ ἐπιθυμεῖν καὶ βούλεσθαι καὶ ὅλως αἱ ὁρέξεις,  
γίνεται δὲ καὶ ἡ κατὰ τόπον κίνησις τοῖς ζώοις ὑπὸ τῆς  
ψυχῆς, ἔτι δ' αὔξη τε καὶ ἀκμὴ καὶ φθίσις, πότερον ὅλη 30  
τῇ ψυχῇ τούτων ἕκαστον ὑπάρχει, καὶ πάσῃ νοούμεν τε καὶ 411b  
αἰσθανόμεθα καὶ κινούμεθα καὶ τῶν ἄλλων ἕκαστον ποιούμεν τε  
καὶ πάσχομεν, ἢ μορίοις ἑτέροις ἕτερα; καὶ τὸ ζῆν δὴ πότερον ἐν  
τινι τούτων ἐστὶν ἢ καὶ ἐν πλείοσιν ἢ πᾶσιν, ἢ καὶ ἄλλο τι  
24 αἷτιον; λέγουσι δὴ τινες μεριστὴν αὐτὴν, καὶ ἄλλο μὲν 5  
νοεῖν ἄλλο δὲ ἐπιθυμεῖν. τί οὖν δὴ ποτε συνέχει τὴν ψυχὴν,  
εἰ μεριστὴ πέφυκεν; οὐ γὰρ δὴ τό γε σῶμα· δοκεῖ γὰρ τοῦ-  
ναντίον μᾶλλον ἢ ψυχὴ τὸ σῶμα συνέχειν· ἐξεληούσης γοῦν  
διαπνεύεται καὶ σήπεται. εἰ οὖν ἕτερόν τι μίαν αὐτὴν ποιεῖ,  
ἐκεῖνο μάλιστα ἂν εἴη ψυχὴ. δεήσει δὲ πάλιν καὶ ἐκεῖνο ζη- 10  
τεῖν πότερον ἐν ἢ πολυμερές. εἰ μὲν γὰρ ἔν, διὰ τί οὐκ  
εὐθέως καὶ ἡ ψυχὴ ἔν; εἰ δὲ μεριστόν, πάλιν ὁ λόγος ζη-  
τήσῃ τί τὸ συνέχον ἐκεῖνο, καὶ οὕτω δὴ πρόεισιν ἐπὶ τὸ  
25 ἄπειρον. ἀπορήσειε δ' ἂν τις καὶ περὶ τῶν μορίων αὐτῆς,

17. εἶναι om. S U X, τὴν ψυχὴν εἶναι T V W y Them. || ὅλον ἐν τοῖς E || 19. εἶναι om. pr. E || ἀπολαμβάνειν S T U W y, tuentur ἀπολαμβάνεσθαι Philop. Soph. || 20. τὰ om. S T U V W y || 22. ὑπάρξει δηλὸν ὅτι fort. inserta ex margine putat Torst., tuentur etiam Simpl. Philop. || 23. ἢ ante ὁμ. om. E, leg. Simpl. || 26. οὐδ' ἀληθῶς om. pr. E, leg. Soph., Dittenberger p. 1614 ut superflua omitti vult || ἐπειδὴ U W y et corr. E, Bek. conl. fuisse ἐπεὶ δὲ (Trend.) || 27. τῆς om. T W y || τὸ ante δοξ. om. S T U W Soph. || 28. δὲ καὶ τὸ S U W X, καὶ etiam Soph. || βουλεύεσθαι T U V W X y et corr. E Them. 36, 29 Soph. || αἰ om. T X, leg. Soph. || 29. ἢ om. E (Trend.) || 30. αἰήσεις S T U V W X et corr. E, αἰξή etiam Soph. || 411 b, 2. αἰσθ. καὶ κινούμεθα καὶ E V W Simpl. Soph. (qui καὶ αἰσθανόμεθα omittit) Torst., αἰσθ. καὶ κινούμεθα om. reliqui ceteri, etiam Bek. Trend. || 4. ἐστὶν ἢ ἐν ἢ E, sed ἐν ἢ expunct. (Bhl.), ἐστὶν ἐν ἢ Bek. Trend.

not to call them animals, if they contain soul, is absurd. But 21 it would seem that the reason why they suppose soul to be in these elements is that the whole is homogeneous with its parts. So that they cannot help regarding universal soul as also homogeneous with the parts of it in animals, since it is through something of the surrounding element being cut off and enclosed in animals that the animals become endowed with soul. But if the air when split up remains homogeneous, and yet soul is divisible into non-homogeneous parts, it is clear that, although one part of soul may be present in the air, there is another part which is not. Either, then, soul must be homogeneous, or else it cannot be present in every part of the universe.

From what has been said it is evident that it is not because the 22 soul is compounded of the elements that knowledge belongs to it, nor is it correct or true to say that the soul is moved. Knowledge, 23 however, is an attribute of the soul, and so are perception, opinion, desire, wish and appetency generally; animal locomotion also is produced by the soul; and likewise growth, maturity and decay.

Shall we then say that each of these belongs to the whole  
 Unity of soul. soul, that we think, that is, and perceive and are moved and in each of the other operations act and are acted upon with the whole soul, or that the different operations are to be assigned to different parts? And what of life itself? Does it reside in any single one or more or all of these parts? Or has it a cause entirely distinct? Now some say that the soul is divisible and 24 that one part of it thinks, another desires. What is it then which holds the soul together, if naturally divisible? Assuredly it is not the body: on the contrary, the soul seems rather to hold the body together; at all events, when it has departed, the body disperses in air and rots away. If, then, the unity of soul is due to some other thing, that other thing would be, properly speaking, soul. We shall need, then, to repeat the enquiry respecting it also, whether it is one or manifold. For, if it has unity, why not attribute unity to the soul itself at the outset? If, however, it be divisible, then again reason will go on to ask what it is that holds it together, and so the enquiry will go on to infinity. It 25 might also be asked what power each of the parts of the soul

Torst. || ἡ καὶ πᾶσι T U W X γ, ἡ καὶ ἐν πᾶσι S V Soph. || 5. δὲ S T U V || 5 et 6. ἄλλο E W Torst., probat etiam Noetel, Zeitschr. f. Gymn. 1864, p. 141, reliqui ante Torst. omnes ἄλλοι, etiam Them. Simpl. Soph. 37, 27 (v. l. ἄλλο) vet. transl. || 7. γε ante τὸ T V, om. S U W X γ || 10. ἡ ψυχὴ T V W γ, ἡ om. etiam Them. Philop. || δὲ καὶ πάλιν T U V X Bek. Trend., καὶ om. γ et E (Bek. teste Torstrikio et Trend.) || 12. καὶ τὴν ψυχὴν ἐν S U W X, καὶ τὴν ψυχὴν ἐν εἶναι T γ, ἐν καὶ τὴν ψυχὴν εἶναι V.

τίν' ἔχει δύναμιν ἕκαστον ἐν τῷ σώματι. εἰ γὰρ ἡ ὅλη 15  
 ψυχὴ πᾶν τὸ σῶμα συνέχει, προσήκει καὶ τῶν μορίων  
 ἕκαστον συνέχειν τι τοῦ σώματος. τοῦτο δ' ἔοικεν ἀδυνάτῳ·  
 ποῖον γὰρ μόριον ἢ πῶς ὁ νοῦς συνέξει, χαλεπὸν καὶ πλά-  
 26 σαι. φαίνεται δὲ καὶ τὰ φυτὰ διαιρούμενα ζῆν καὶ τῶν  
 ζώων ἓν ἓν τῶν ἐντόμων, ὡς τὴν αὐτὴν ἔχοντα ψυχὴν τῷ 20  
 εἶδει, εἰ καὶ μὴ ἀριθμῷ· ἐκάτερον γὰρ τῶν μορίων αἰσθησιν  
 ἔχει καὶ κινεῖται κατὰ τόπον ἐπὶ τινα χρόνον. εἰ δὲ μὴ  
 διατελοῦσιν, οὐθὲν ἄτοπον· ὄργανα γὰρ οὐκ ἔχουσιν ὥστε σώ-  
 ζειν τὴν φύσιν. ἀλλ' οὐδὲν ἦττον ἐν ἐκατέρῳ τῶν μορίων  
 ἅπαντ' ἐνυπάρχει τὰ μόρια τῆς ψυχῆς, καὶ ὁμοειδεῖς εἰσὶν 25  
 ἀλλήλαις καὶ τῇ ὅλῃ, ἀλλήλων μὲν ὡς οὐ χωριστὰ ὄντα,  
 27 τῆς δ' ὅλης ψυχῆς ὡς διαιρετῆς οὔσης. ἔοικε δὲ καὶ ἡ ἐν  
 τοῖς φυτοῖς ἀρχὴ ψυχὴ τις εἶναι· μόνης γὰρ ταύτης κοι-  
 νωνεῖ καὶ ζῶα καὶ φυτὰ· καὶ αὕτη μὲν χωρίζεται τῆς  
 αἰσθητικῆς ἀρχῆς, αἰσθησιν δ' οὐθὲν ἄνευ ταύτης ἔχει. 30

17. ἀδύνατον Philop. || 18. συνέχει E V et fort. Simpl. (cf. p. 95, 31), σινέξει etiam Them. Philop. Soph. || 21. μὴ καὶ E || γὰρ] γοῦν S V X Soph. Bek. Trendl., οἶν U W, γὰρ in paraphr. Them. Philop. || 25. ὁμοειδῆ εἰσὶν ἀλλήλοις W et nunc E (Trendl.) Soph. Bek. Trendl. Rodier, ὁμοειδεῖς εἰσὶν ἀλλήλαις reliqui codd. et pr. E (Bek.), etiam Philop. Simpl. Torst. Biehl || 26. ἀλλήλων] ἀλλήλοις W Soph., ἀλλήλαις V, ἀλλήλων etiam Simpl. Philop. || 28. ψυχὴ ante ἀρχὴ T Torst., om. S U, ψυχὴ post ἀρχὴ videntur legisse etiam Them. 38, 22 sq. Philop. 202, 5. 6 || 29. καὶ τὰ ζῶα E, τὰ om. etiam Simpl. Soph., καὶ τὰ ζῶα καὶ τὰ φυτὰ in interpr. Them.

exercises in the body. For, if the entire soul holds together the whole body, then each of its parts ought properly to hold together some part of the body. But this seems impossible. For it is difficult even to conjecture what part the intellect will hold together or how it can hold any part together. It is found that plants, and 26 among animals certain insects or annelida, live when divided, which implies that the soul in their segments is specifically, though not numerically, the same. At any rate, each of the two segments retains sentience and the power of locomotion for some time: that they do not continue to do so is not surprising, as they lack the organs requisite to maintain their nature. But none the less all the parts of the soul are contained in each of the two segments, and the two halves of the soul are homogeneous alike with one another and with the whole; a fact which implies that, while the parts of the soul are inseparable from one another, the soul as a whole is divisible. It would seem that the vital principle 27

The soul  
in plants.      in plants also is a sort of soul. For this principle is the only one common to plants and animals; and, while it can be separated from the sensitive principle, no being which has sensation is without it.

## ΠΕΡΙ ΨΥΧΗΣ Β.

1 Τὰ μὲν δὴ ὑπὸ τῶν πρότερον παραδεδομένα περὶ ψυ- 412a  
 χῆς εἰρήσθω· πάλιν δ' ὥσπερ ἐξ ὑπαρχῆς ἐπανίωμεν, πει-  
 ρώμενοι διορίσαι τί ἐστὶ ψυχὴ καὶ τίς ἂν εἴη κοινότατος 5  
 2 λόγος αὐτῆς. λέγομεν δὴ γένος ἔν τι τῶν ὄντων τὴν οὐσίαν,  
 ταύτης δὲ τὸ μὲν ὡς ὕλην, ὃ καθ' αὐτὸ μὲν οὐκ ἔστι τόδε  
 τι, ἕτερον δὲ μορφήν καὶ εἶδος, καθ' ἣν ἤδη λέγεται τόδε  
 τι, καὶ τρίτον τὸ ἐκ τούτων. ἔστι δ' ἡ μὲν ὕλη δύναμις, τὸ  
 δ' εἶδος ἐντελέχεια, καὶ τοῦτο διχῶς, τὸ μὲν ὡς ἐπιστήμη, 10  
 3 τὸ δ' ὡς τὸ θεωρεῖν. οὐσίαι δὲ μάλιστα εἶναι δοκοῦσι τὰ σῶ-  
 ματα, καὶ τούτων τὰ φυσικά· ταῦτα γὰρ τῶν ἄλλων ἀρ-  
 χαί. τῶν δὲ φυσικῶν τὰ μὲν ἔχει ζῶην, τὰ δ' οὐκ ἔχει·  
 ζῶην δὲ λέγομεν τὴν δι' αὐτοῦ τροφήν τε καὶ αὔξησιν καὶ  
 φθίσιν. ὥστε πᾶν σῶμα φυσικὸν μετέχον ζωῆς οὐσία ἂν 15  
 4 εἴη, οὐσία δ' οὕτως ὡς συνθέτη. ἐπεὶ δ' ἔστι καὶ σῶμα τοι-  
 ὄνδε, ζῶην γὰρ ἔχον, οὐκ ἂν εἴη τὸ σῶμα ἢ ψυχὴ· οὐ  
 γάρ ἐστι τῶν καθ' ὑποκειμένου τὸ σῶμα, μᾶλλον δ' ὡς  
 ὑποκείμενον καὶ ὕλη. ἀναγκαῖον ἄρα τὴν ψυχὴν οὐσίαν  
 εἶναι ὡς εἶδος σώματος φυσικοῦ δυνάμει ζῶην ἔχον- 20  
 τος. ἡ δ' οὐσία ἐντελέχεια. τοιούτου ἄρα σώματος ἐν-

412 a, 3. Τὰ μὲν...4. ἐπανίωμεν] Ἐπεὶ δὲ τὰ παραδεδομένα περὶ ψυχῆς παρὰ τῶν ἄλλων, ἐφ' ὅσον (ὅσων X), ἕκαστος ἀπεφῆνατο (τῶν E) πρότερον (πρῶτων W X), εἴρηται σχεδόν, νῦν (νῦν δὲ W), ὥσπερ ἐξ ἀρχῆς πάλιν ἐπανίωμεν S U W X m Soph. et E fol. 186 (vide appendicem). Them. Simpl. Philop. et vetusta translatio latina sine dubio vulgatam legerunt || 3. προτέρων V y || 4. εἴρηται margo E, εἰρήσθω etiam Simpl. || 5. ἐστὶ ψυχὴ E et fol. 186 et 187 (Bhl.), ἢ om. etiam Them. Soph. || ἂν εἴη] ἐστὶ S U W X, ἂν εἴη etiam Them. Soph. || κοινός U W X, κοινότατος etiam Them. Simpl. Soph. || 6. λέγομεν... 12. φυσικά vid. append., vulgatam legerunt etiam Alex. ἀπ. καὶ λύσ. 74, 32 et Them. || 6. δὲ U V, δὴ Alex. l. l. Them. || ἔν τι γένος S W X, γένος ἔν τι etiam Alex. l. l. Them. Soph. || 9. δυνάμει y Philop. et, ut videtur, Them. 39, 7. 10 Simpl. 84, 1 (cf. 83, 30. 34), δυνάμει etiam Soph. || 11. ὡς τὸ om. E et margo E, leg. Them. || 14. αὐτοῦ Them., αὐτοῦ etiam Simpl. Soph. 41, 5 (in cod. Vindob., teste Biehlio, δι αὐτοῦ e cod. Ilayduck) || 16. δὴ ἐστὶ E<sub>1</sub> y et, ut videtur, Them. 39, 33, qui interpretatur τοῖον, rc. E

## DE ANIMA. BOOK II.

So much for the theories of soul handed down by our pre-<sup>1</sup>  
 decessors. Let us, then, make a fresh start and try to  
 determine what soul is and what will be its most com-  
 prehensive definition. Now there is one class of existent <sup>2</sup>  
 things which we call substance, including under the  
 term, firstly, matter, which in itself is not this or that; secondly,  
 shape or form, in virtue of which the term this or that is at once  
 applied; thirdly, the whole made up of matter and form. Matter  
 is identical with potentiality, form with actuality. And there  
 are two meanings of actuality: knowledge illustrates the one,  
 exercise of knowledge the other. Now bodies above all things <sup>3</sup>  
 are held to be substances, particularly such bodies as are the work  
 of nature; for to these all the rest owe their origin. Of natural  
bodies some possess life and some do not: where by life we mean  
the power of self-nourishment and of independent growth and  
decay. Consequently every natural body possessed of life must  
 be substance, and substance of the composite order. And since <sup>4</sup>  
 in fact we have here body with a certain attribute, namely, the  
 possession of life, the body will not be the soul: for the body is  
 not an attribute of a subject, it stands rather for a subject of  
 attributes, that is, matter. It must follow, then, that soul is  
 substance in the sense that it is the form of a natural body having  
 in it the capacity of life. Such substance is actuality. The soul,

(Rr.) et reliqui δ' ἐστὶ, etiam Soph. || καὶ ante σῶμα om. U V W X P Soph. Bek. Trend.  
 Rodier Zeller II, 2<sup>3</sup>, p. 480 || τοῖονδε ETP, καὶ τοιονδί τοῦτο S U V W X Rodier, καὶ  
 τοιονδί y Trend. Hunc v. varie interpretantur; ἐπεὶ οὐχ ἀπλῶς σῶμα, ἀλλὰ σῶμα τοιονδί  
 Them., Philop. modo καὶ σῶμά ἐστι καὶ τοιονδί 215, 5, modo σῶμά ἐστι τοιονδί 215, 7sq.,  
 ἐπεὶ δ' ἐστὶ σῶμα καὶ τοῖονδε σῶμα Soph. || 17. τὸ om. S U Zeller, Archiv f. G. d. Ph.  
 IX, p. 538 || ἡ ψυχὴ S U V W X y Philop. 215, 11. 18. 22 Alex. ap. Philop. Zeller l. l.,  
 ἡ om. E T Bek. Trend. Torst. Biehl Rodier, etiam Soph., de Them. non liquet, qui, cum  
 39, 35 οὐδεὶς γὰρ ἂν εἴποι τὸ σῶμα εἶδος τοῦ ζῶντος σώματος, tum 40, 4 ὅτι γὰρ οὐ σῶμα ἡ  
 ψυχὴ δέδεικται interpretatur: cf. 40, 34 || εἶδος pro ψυχῇ coni. Innes, Cl. Rev. XVI,  
 p. 462.

- 5 τελέχεια. αὕτη δὲ λέγεται διχῶς, ἡ μὲν ὡς ἐπιστήμη,  
 ἡ δ' ὡς τὸ θεωρεῖν. φανερόν οὖν ὅτι ὡς ἐπιστήμη· ἐν γὰρ  
 τῷ ὑπάρχειν τὴν ψυχὴν καὶ ὕπνος καὶ ἐγρήγορσις ἐστίν,  
 ἀνάλογον δ' ἡ μὲν ἐγρήγορσις τῷ θεωρεῖν, ὁ δ' ὕπνος τῷ 25  
 ἔχειν καὶ μὴ ἐνεργεῖν· προτέρα δὲ τῇ γενέσει ἐπὶ τοῦ αὐτοῦ  
 ἡ ἐπιστήμη. διὸ ἡ ψυχὴ ἐστὶν ἐντελέχεια ἡ πρώτη σώματος  
 6 φυσικοῦ δυνάμει ζωὴν ἔχοντος. τοιοῦτο δέ, ὃ ἂν ᾖ ὄργανι-  
 κόν. ὄργανα δὲ καὶ τὰ τῶν φυτῶν μέρη, ἀλλὰ παντελῶς 412b  
 ἀπλᾶ, οἷον τὸ φύλλον περικαρπίου σκέπασμα, τὸ δὲ πε-  
 ρικάρπιον καρποῦ· αἱ δὲ ρίζαι τῷ στόματι ἀνάλογον· ἄμφω  
 γὰρ ἔλκει τὴν τροφήν. εἰ δὴ τι κοινὸν ἐπὶ πάσης ψυχῆς  
 δεῖ λέγειν, εἴη ἂν ἐντελέχεια ἡ πρώτη σώματος φυσικοῦ 5  
 7 ὀργανικοῦ. διὸ καὶ οὐ δεῖ ζητεῖν εἰ ἐν ἡ ψυχὴ καὶ τὸ σῶμα,  
 ὥσπερ οὐδὲ τὸν κηρὸν καὶ τὸ σχῆμα, οὐδ' ὅλως τὴν ἐκάστου  
 ὕλην καὶ τὸ οὐ ἡ ὕλη· τὸ γὰρ ἐν καὶ τὸ εἶναι ἐπεὶ πλεονα-  
 χῶς λέγεται, τὸ κυρίως ἡ ἐντελέχειά ἐστιν.
- 8 καθόλου μὲν οὖν εἴρηται τί ἐστὶν ἡ ψυχὴ· οὐσία γὰρ ἡ κατὰ 10  
 τὸν λόγον. τοῦτο δὲ τὸ τί ᾗν εἶναι τῷ τοιῷδὲ σώματι, καθάπερ εἴ τι  
 τῶν ὀργάνων φυσικὸν ᾗν σῶμα, οἷον πέλεκυς· ᾗν μὲν γὰρ ἂν  
 τὸ πελέκει εἶναι ἡ οὐσία αὐτοῦ, καὶ ἡ ψυχὴ τοῦτο· χωρι-  
 σθείσης δὲ ταύτης οὐκ ἂν ἔτι πέλεκυς ᾗν, ἀλλ' ἡ ὁμω-  
 νύμῳ. νῦν δ' ἐστὶ πέλεκυς· οὐ γὰρ τοιούτου σώματος τὸ τί 15  
 ᾗν εἶναι καὶ ὁ λόγος ἡ ψυχὴ, ἀλλὰ φυσικοῦ τοιουδὲ ἔχον-  
 9 τος ἀρχὴν κινήσεως καὶ στάσεως ἐν ἑαυτῷ. θεωρεῖν δὲ καὶ  
 ἐπὶ τῶν μερῶν δεῖ τὸ λεχθέν. εἰ γὰρ ᾗν ὁ ὀφθαλμὸς ζῶον,  
 ψυχὴ ἂν ᾗν αὐτοῦ ἡ ὄψις· αὕτη γὰρ οὐσία ὀφθαλμοῦ ἡ  
 κατὰ τὸν λόγον. ὁ δ' ὀφθαλμὸς ὕλη ὄψεως, ἧς ἀπολει- 20  
 πούσης οὐκέτ' ὀφθαλμός, πλὴν ὁμωνύμῳ, καθάπερ ὁ λί-

26. δὴ E (Bus.) et Uy, reliqui omnes δὲ || 27. διὸ ἡ ψ. ET Vy Biehl Rodier, ἡ om. reliqui, etiam Soph. || 28. τοιοῦτον STVWX || 412 b, 4. δὲ ESTVy, δὴ etiam Them. Soph. Philop. ad 402 b, 5 (37, 15) et in prooemio ad lib. II. (205, 15) Bek. Trend. Torst. || 5. ἡ πρώτης ἐντ. WX, vulgatae tuelur etiam Them. || 8. οὐ ἔλη SUWX Soph. Bek. Trend. Torst. || 9. λέγεται om. SUWX Them., leg. etiam Soph. || 12. μὲν E (Trend. Bus.) et y Torst. Belger in ed. alt. Trend. Biehl Rodier, om. reliqui, etiam Philop. || 13. τὸ τῷ ETW et rc. X || 14. δὲ γὰρ SX Bek. Trend. Torst., "autem" vet. transl., διὸ ἀπελθοῦσης P || 15. νῦν δ' οὐκ ἐστιν conī. Torst., neque Them. neque Philop. neque Soph. οὐ legerunt || 16. τοιουδὲ etiam Soph., τοῦ Alex. ἀπ. καὶ λ. 76, 14 et Philop. || 17. αὐτῷ SUVW Alex. l. 1., αὐτῷ X, ἐαυτῷ etiam Philop. || 20. Torst. conī. ὁ δ' ὀφθαλμὸς τὸ σύνολον, ἡ δὲ κῶρη ὕλη ὄψεως, iisdem fere verbis interpretatur Them., ὁ δ'...ὄψεως in parenth. ponenda, puncto post λόγον deletio, censet Bywater, J. of Ph.



therefore, is the actuality of the body above described. But the 5 term 'actuality' is used in two senses; in the one it answers to knowledge, in the other to the exercise of knowledge. Clearly in this case it is analogous to knowledge: for sleep, as well as waking, implies the presence of soul; and, whilst waking is analogous to the exercise of knowledge, sleep is analogous to the possession of knowledge without its exercise; and in the same individual the possession of knowledge comes in order of time before its exercise. Hence soul is the first actuality of a natural body having in it the capacity of life. And a body which is possessed of organs 6 answers to this description.—We may note that the parts of plants, as well as those of animals, are organs, though of a very simple sort: for instance, a leaf is the sheath of the pod and the pod of the fruit. The roots, again, are analogous to the mouths of animals, both serving to take in nourishment.—If, then, we have to make a general statement touching soul in all its forms, the soul will be the first actuality of a natural body furnished with organs. Hence there is no need to enquire whether soul and body are 7 one, any more than whether the wax and the imprint are one; or, in general, whether the matter of a thing is the same with that of which it is the matter. For, of all the various meanings borne by the terms unity and being, actuality is the meaning which belongs to them by the fullest right.

It has now been stated in general terms what soul is, namely, 8 substance as notion or form. And this is the quiddity of such and such a body. Suppose, for example, that any instrument, say, an axe, were a natural body, its axeity would be its substance, would in fact be its soul. If this were taken away, it would cease, except in an equivocal sense, to be an axe. But the axe is after all an axe. For it is not of a body of this kind that the soul is the quiddity, that is, the notion or form, but of a natural body of a particular sort, having in itself the origination of motion and rest.

Further, we must view our statement in the light of the parts of 9 the body. For, if the eye were an animal, eyesight would be its soul, this being the substance as notion or form of the eye. The eye is the matter of eyesight, and in default of eyesight it is no longer an eye, except equivocally,

Illustration from (1) the axeity of an axe,

(2) the eyesight of an eye.

XVII, p. 54, cui assentitur Susemihl, vulgatam tuentur etiam Philop. 221, 24 Simpl. et vet. transl. || ἀπολιπούσης TVW Them. Simpl. Trend., ἀπολειπούσης etiam Soph. || 21. οὐκ ἔστιν STUVW Bek. Trend., οὐκέτι EX, οὐκέτ' Them. Torst., οὐκέτι ἔστιν in interpr. Simpl. 93, 32, οὐκέτι ἔσται Soph. || ὁμῶνυμος E.

θινος καὶ ὁ γεγραμμένος. δεῖ δὴ λαβεῖν τὸ ἐπὶ μέρους ἐφ'  
 ὅλου τοῦ ζῶντος σώματος· ἀνάλογον γὰρ ἔχει ὡς τὸ μέ-  
 ρος πρὸς τὸ μέρος, οὕτως ἡ ὅλη αἴσθησις πρὸς τὸ ὅλον  
 10 σῶμα τὸ αἰσθητικόν, ἥ τοιούτον. ἔστι δὲ οὐ τὸ ἀποβεβληκὸς 25  
 τὴν ψυχὴν τὸ δυνάμει ὄν ὥστε ζῆν, ἀλλὰ τὸ ἔχον· τὸ δὲ  
 11 σπέρμα καὶ ὁ καρπὸς τὸ δυνάμει τοιουνδὶ σῶμα. ὡς μὲν  
 οὖν ἡ τμήσις καὶ ἡ ὄρασις, οὕτω καὶ ἡ ἐργήγορσις ἐντελέ-  
 χεια, ὡς δ' ἡ ὄψις καὶ ἡ δύναμις τοῦ ὀργάνου, ἡ ψυχὴ· 413a  
 τὸ δὲ σῶμα τὸ δυνάμει ὄν· ἀλλ' ὥσπερ ὀφθαλμὸς ἡ  
 12 κόρη καὶ ἡ ὄψις, κακεῖ ἡ ψυχὴ καὶ τὸ σῶμα ζῶν. ὅτι  
 μὲν οὖν οὐκ ἔστιν ἡ ψυχὴ χωριστὴ τοῦ σώματος, ἡ μέρη  
 τινὰ αὐτῆς, εἰ μεριστὴ πέφυκεν, οὐκ ἄδηλον· ἐνίων γὰρ ἡ 5  
 ἐντελέχεια τῶν μερῶν ἐστὶν αὐτῶν. οὐ μὴν ἀλλ' ἐνία γε  
 οὐθὲν κωλύει, διὰ τὸ μηθενὸς εἶναι σώματος ἐντελεχείας.  
 13 ἔτι δὲ ἄδηλον εἰ οὕτως ἐντελέχεια τοῦ σώματος ἡ ψυχὴ  
 ὥσπερ πλωτὴρ πλοίου. τύπῳ μὲν οὖν ταύτῃ διωρίσθω καὶ  
 ὑπογεγράφθω περὶ ψυχῆς. 10

2 Ἐπεὶ δ' ἐκ τῶν ἀσαφῶν μὲν φανερωτέρων δὲ γίγνε-  
 ται τὸ σαφές καὶ κατὰ τὸν λόγον γνωριμώτερον, πειρα-  
 τέον πάλιν οὕτω γ' ἐπελθεῖν περὶ αὐτῆς· οὐ γὰρ μόνον τὸ ὅτι  
 δεῖ τὸν ὀριστικὸν λόγον δηλοῦν, ὥσπερ οἱ πλείστοι τῶν ὄρων  
 λέγουσιν, ἀλλὰ καὶ τὴν αἰτίαν ἐννύαρχειν καὶ ἐμφαίνει· 15  
 σθαι. νῦν δ' ὥσπερ συμπεράσμαθ' οἱ λόγοι τῶν ὄρων εἰσίν·  
 οἷον τί ἐστὶν ὁ τετραγωνισμός; τὸ ἴσον ἑτερομήκει ὀρθογώνιον  
 εἶναι ἰσοπλευρον. ὁ δὲ τοιούτος ὁρος λόγος τοῦ συμπεράσμα-  
 τος. ὁ δὲ λέγων ὅτι ἐστὶν ὁ τετραγωνισμὸς μέσης εὗρεσις,  
 2 τοῦ πράγματος λέγει τὸ αἷτιον. λέγομεν οὖν ἀρχὴν λαβόν· 20  
 τες τῆς σκέψεως, διωρίσθαι τὸ ἐμψυχον τοῦ ἀψύχου τῷ  
 ζῆν. πλεοναχῶς δὲ τοῦ ζῆν λεγομένου, καὶ ἐν τι τούτων

22. δὲ V X, δὴ etiam Them., τοῖνον interpr. Simpl. || 24. οὕτως om. U V W X Soph., leg. Philop. Simpl. || 25. τοιοῦτο U W Bek. Trendl., τοιοῦτον reliqui codd. et E (Bus.) Philop. Soph. Torst. || 27. τοιόνδε Alex. ἀπ. καὶ λ. 76, 25 || 28. τμήσις codd., αἴσθησις conl. Christ || 413 a, 2. ὁ δφθ. T U W X Simpl. Soph. Bek. Trendl., ὁ om. Philop. ad 412 b, 17 (231, 22) et Them. || 3. τὸ ζῶν S U W X Them. Simpl. Soph. Bek. Trendl. || 5. ἐνίων γὰρ ἡ ἐντελέχεια || ἐνία γὰρ ἐντελέχεια forsitā legerit Soph. 44, 29 || 8. τε E, δὲ etiam Philop. ad 411 a, 26 (139, 35) et Soph. || 13. οὕτω E (Bhl.) P, reliqui et scripti et ante Biehlium impressi omnes οὕτως || γ' ἐπελθεῖν E P Soph., reliqui et scripti et ante Biehlium impressi omnes om. γε, ἐπανελθεῖν S Philop. 230, 6 Simpl. || 17. ἔστι τετραγωνισμός V W Them. Soph. Bek. Trendl. Torst. || 18. λόγος om. E T V || 19. ὁ post ἐστὶν om. W X Them. || εὗρεσις T U W X || 20. λέγωμεν T W Alex. 77, 2,

like an eye in stone or in a picture. What has been said of the part must be understood to apply to the whole living body; for, as the sensation of a part of the body is to that part, so is sensation as a whole to the whole sentient body as such. By that which 10 has in it the capacity of life is meant not the body which has lost its soul, but that which possesses it. Now the seed in animals, like the fruit in plants, is that which is potentially such and such a body. As, then, the cutting of the axe or the seeing of the eye 11 is full actuality, so, too, is the waking state; while the soul is actuality in the same sense as eyesight and the capacity of the instrument. The body, on the other hand, is simply that which is potentially existent. But, just as in the one case the eye means the pupil in conjunction with the eyesight, so in the other soul and body together constitute the animal.

Now it needs no proof that the soul—or if it is divisible into 12 parts, certain of its parts—cannot be separated from the body, for there are cases where the actuality belongs to the parts themselves. There is, however, no reason why some parts should not be separated, if they are not the actualities of any body whatever. Again, it is not clear whether the soul 13 may not be the actuality of the body as the sailor is of the ship. This, then, may suffice for an outline or provisional sketch of soul.

But, as it is from the things which are naturally obscure, though 2 more easily recognised by us, that we proceed to what is clear and, in the order of thought, more knowable, we must employ this method in trying to give a fresh account of soul. For it is not enough that the defining statement should set forth the fact, as most definitions do; it should also contain and present the cause: whereas in practice what is stated in the definition is usually no more than a conclusion. For example, what is quadrature? The construction of an equilateral rectangle equal in area to a given oblong. But such a definition expresses merely the conclusion. Whereas, if you say that quadrature is the discovery of a mean proportional, then you state the reason.

We take, then, as our starting-point for discussion that it is life 2 which distinguishes the animate from the inanimate. But the term life is used in various senses; and, if life is present in but a

λέγουμεν etiam Them. Philop. Soph. || τὴν ἀρχὴν Alex. I. I., τὴν om. Them. Philop., ἄλλην ἀρχὴν coni. Susemihl || 21. σκέψεως τοῦ πράγματος S U W X Alex. I. I., τοῦ πράγ. om. etiam Soph. || 22. ζῶν ζῶντι σώματι Alex. I. I.

ἐνυπάρχῃ μόνον, ζῆν αὐτό φαμεν, οἶον νοῦς, αἰσθησις, κί-  
 νησις καὶ στάσις ἢ κατὰ τόπον, ἔτι κίνησις ἢ κατὰ τρο-  
 3 φὴν καὶ φθίσις τε καὶ αὔξησις. διὸ καὶ τὰ φνύμενα 25  
 πάντα δοκεῖ ζῆν· φαίνεται γὰρ ἐν αὐτοῖς ἔχοντα δύναμιν  
 καὶ ἀρχὴν τοιαύτην, δι' ἧς αὔξησίν τε καὶ φθίσιν λαμ-  
 βάνουσι κατὰ τοὺς ἐναντίους τόπους· οὐ γὰρ ἄνω μὲν αὔξε-  
 ται, κάτω δ' οὐ, ἀλλ' ὁμοίως ἐπ' ἄμφω καὶ πάντῃ, ὅσα ἀεὶ  
 τρέφεται τε καὶ ζῆ διὰ τέλους, ἕως ἂν δύνῃται λαμβάνειν 30  
 4 τροφήν. χωρίζεσθαι δὲ τοῦτο μὲν τῶν ἄλλων δυνατόν, τὰ  
 δ' ἄλλα τούτου ἀδύνατον ἐν τοῖς θνητοῖς. φανερόν δ' ἐπὶ  
 τῶν φνομένων· οὐδεμία γὰρ αὐτοῖς ὑπάρχει δύναμις ἄλλη  
 ψυχῆς. τὸ μὲν οὖν ζῆν διὰ τὴν ἀρχὴν ταύτην ὑπάρχει τοῖς 413b  
 ζῶσι, τὸ δὲ ζῶον διὰ τὴν αἰσθησιν πρώτως· καὶ γὰρ τὰ  
 μὴ κινούμενα μὴδ' ἀλλάττοντα τόπον, ἔχοντα δ' αἰσθησιν  
 5 ζῶα λέγομεν καὶ οὐ ζῆν μόνον. αἰσθήσεως δὲ πρῶτον ὑπάρ-  
 χει πᾶσιν ἀφή. ὥσπερ δὲ τὸ θρεπτικὸν δύναται χωρίζε- 5  
 σθαι τῆς ἀφῆς καὶ πάσης αἰσθήσεως, οὕτως ἡ ἀφή τῶν  
 ἄλλων αἰσθήσεων. θρεπτικὸν δὲ λέγομεν τὸ τοιοῦτον μόριον  
 τῆς ψυχῆς οὗ καὶ τὰ φνύμενα μετέχει· τὰ δὲ ζῶα πάντα  
 φαίνεται τὴν ἀπτικήν αἰσθησιν ἔχοντα· δι' ἣν δ' αἰτίαν  
 ἐκάτερον τούτων συμβέβηκεν, ὕστερον ἐροῦμεν. 10  
 6 νῦν δ' ἐπὶ τοσοῦτον εἰρήσθω μόνον, ὅτι ἐστὶν ἡ ψυχὴ τῶν  
 εἰρημένυν τούτων ἀρχὴ καὶ τοῦτο ὥρισταί, θρεπτικῶ, αἰσθητικῶ,  
 7 διανοητικῶ, κινήσει. πότερον δὲ τούτων ἕκαστόν ἐστι ψυχὴ ἢ  
 μόριον ψυχῆς, καὶ εἰ μόριον, πότερον οὕτως ὥστ' εἶναι χωριστὸν  
 λόγῳ μόνον ἢ καὶ τόπῳ, περὶ μὲν τινῶν τούτων οὐ χαλεπὸν 15  
 8 ἰδεῖν, ἔνια δὲ ἀπορίαν ἔχει. ὥσπερ γὰρ ἐπὶ τῶν φυτῶν ἔνια  
 διαιρούμενα φαίνεται ζῶντα καὶ χωριζόμενα ἀπ' ἀλλήλων,  
 ὡς οὔσης τῆς ἐν τούτοις ψυχῆς ἐντελεχεία μὲν μιᾶς ἐν ἐκάστῳ  
 φυτῶ, δυνάμει δὲ πλειόνων, οὕτως ὁρώμεν καὶ περὶ ἐτέρας  
 διαφορὰς τῆς ψυχῆς συμβαῖνον ἐπὶ τῶν ἐντόμων ἐν τοῖς 20  
 διατεμνομένοις· καὶ γὰρ αἰσθησιν ἐκάτερον τῶν μερῶν ἔχει

23. ὑπάρχῃ SWX Philop. || 25. φθίσιν et αὔξησιν SUWX Soph. Trend. Rodier ||  
 29. πάντῃ ἐκτρέφεται τε καὶ SUX Rodier, πάντῃ ὅσα ἀεὶ τρέφεται τε καὶ ET et omisso  
 τε W, πάντοσε καὶ τρέφεται καὶ V Bek. Trend., πάντοσε· καὶ τρέφεται τε καὶ Torst., πάντῃ·  
 καὶ τρέφεται διὰ τέλους καὶ ζῆ P, πάντῃ ὅσα καὶ τρέφεται, καὶ de coniectura scripsit Biehli ||  
 30. post τέλους virgulam Bek. Trend., om. Torst. || 413 b, i. τοῖς ζ· πᾶσι τοῖς ζῶσι S U  
 Them. Soph., τοῖς ζῶσι πᾶσι X || 4. ὑπάρχει πρῶτον πᾶσιν S, πᾶσιν ὑπάρχει πρῶτον X,  
 πρῶτον ὑπάρχει πᾶσιν ceteri, etiam P || 5. δὲ] γὰρ X, δὲ etiam Them. Philop. || 8. φυτὰ

single one of these senses, we speak of a thing as living. Thus  
 Various there is intellect, sensation, motion from place to place  
 vital func- and rest, the motion concerned with nutrition and,  
 tions or operations. further, decay and growth. Hence it is that all 3  
 plants are supposed to have life. For apparently they have within  
 The mini- themselves a faculty and principle whereby they grow  
 mum in and decay in opposite directions. For plants do not  
 plants. grow upwards without growing downwards; they grow  
 in both directions equally, in fact in all directions, as many as  
 are constantly nourished and therefore continue to live, so long  
 as they are capable of absorbing nutriment. This form of life 4  
 can be separated from the others, though in mortal creatures the  
 others cannot be separated from it. In the case of plants the fact  
 is manifest: for they have no other faculty of soul at all.

It is, then, in virtue of this principle that all living things live,  
 whether animals or plants. But it is sensation primarily  
 Sensation in all which constitutes the animal. For, provided they have  
 animals. sensation, even those creatures which are devoid of move-  
 ment and do not change their place are called animals and are  
 not merely said to be alive. Now the primary sense in all animals 5  
 is touch. But, as the nutritive faculty may exist without touch  
 or any form of sensation, so also touch may exist apart from the  
 other senses. By nutritive faculty we mean the part of the soul  
 in which even plants share. Animals, however, are found uni-  
 versally to have the sense of touch: why this is so in each of the  
 two cases will be stated hereafter.

For the present it may suffice to say that the soul is the origin 6  
 of the functions above enumerated and is determined by them,  
 namely, by capacities of nutrition, sensation, thought, and by  
 motion. But whether each one of these is a soul or part 7  
 Mutual connection of these functions. of a soul and, if a part, whether it is only logically  
 distinct or separable in space also is a question, the  
 answer to which is in some cases not hard to see: other cases  
 present difficulties. For, just as in the case of plants some of them 8  
 are found to live when divided and separated from each other  
 (which implies that the soul in each plant, though actually one,  
 is potentially several souls), so, too, when insects or annelida are  
 cut up, we see the same thing happen with other varieties of soul:  
 I mean, each of the segments has sensation and moves from place

SUX Bek. Trend. || 12. θρεπτικῶ <δρεπτικῶ> conl. Susemihl || 13. post κινήσει addendum  
 ὀρέξει putat Steinhart || 15. τούτων om. SUWX Them. Soph. || 18. αὐτοῖς SUVX  
 Them. Soph.

καὶ κίνησιν τὴν κατὰ τόπον, εἰ δ' αἰσθησιν, καὶ φαντασίαν  
καὶ ὄρεξιν· ὅπου μὲν γὰρ αἰσθησις, καὶ λύπη τε καὶ ἡδονή,  
9 ὅπου δὲ ταῦτα, ἐξ ἀνάγκης καὶ ἐπιθυμία. περὶ δὲ τοῦ νοῦ  
καὶ τῆς θεωρητικῆς δυνάμεως οὐδέν πω φανερόν, ἀλλ' ἔοικε 25  
ψυχῆς γένος ἕτερον εἶναι, καὶ τοῦτο μόνον ἐνδέχεται χωρί-  
10 ζεσθαι, καθάπερ τὸ αἶδιον τοῦ φθαρτοῦ. τὰ δὲ λοιπὰ μόρια  
τῆς ψυχῆς φανερόν ἐκ τούτων ὅτι οὐκ ἔστι χωριστά, καθάπερ  
τινὲς φασιν· τῷ δὲ λόγῳ ὅτι ἕτερα, φανερόν· αἰσθητικῶ  
γὰρ εἶναι καὶ δοξαστικῶ ἕτερον, εἵπερ καὶ τὸ αἰσθάνεσθαι 30  
τοῦ δοξάζειν. ὁμοίως δὲ καὶ τῶν ἄλλων ἕκαστον τῶν εἰρημέ-  
11 νων. ἔτι δ' ἐνίοις μὲν τῶν ζώων ἅπανθ' ὑπάρχει ταῦτα,  
τισὶ δὲ τινα τούτων, ἐτέροις δὲ ἐν μόνον (τοῦτο δὲ ποιήσῃ  
διαφορὰν τῶν ζώων)· διὰ τίνα δ' αἰτίαν, ὕστερον ἐπισκεπτέον. 414a  
παραπλήσιον δὲ καὶ περὶ τὰς αἰσθήσεις συμβέβηκεν· τὰ μὲν γὰρ  
ἔχει πάσας, τὰ δὲ τινάς, τὰ δὲ μίαν τὴν ἀναγκαιοτάτην, ἀφήν.  
12 ἐπεὶ δὲ ᾧ ζῶμεν καὶ αἰσθανόμεθα διχῶς λέγεται,  
καθάπερ ᾧ ἐπιστάμεθα (λέγομεν δὲ τὸ μὲν ἐπιστήμην 5  
τὸ δὲ ψυχὴν, ἑκατέρῳ γὰρ τούτων φανερὸν ἐπίστασθαι),  
ὁμοίως δὲ καὶ ᾧ ὑγιαίνομεν τὸ μὲν ὑγείᾳ τὸ δὲ μορίῳ  
τινὶ τοῦ σώματος ἢ καὶ ὅλῳ· τούτων δ' ἡ μὲν ἐπιστήμη  
τε καὶ ὑγεία μορφή καὶ εἰδὸς τι καὶ λόγος καὶ οἶον ἐνέρ-  
γεια τοῦ δεκτικοῦ, ἡ μὲν τοῦ ἐπιστημονικοῦ, ἡ δὲ τοῦ ὑγιαστικοῦ 10  
(δοκεῖ γὰρ ἐν τῷ πάσχοντι καὶ διατιθεμένῳ ἡ τῶν ποιητι-  
κῶν ὑπάρχειν ἐνέργεια)· ἡ ψυχὴ δὲ τοῦτο ᾧ ζῶμεν καὶ  
αἰσθανόμεθα καὶ διανοούμεθα πρῶτως· ὥστε λόγος τις ἂν εἴη

22. καὶ φαντασίαν deleri vult Freudenthal, Ueber den Begriff φαντασία bei Arist. p. 8, cui assentiuntur Schieboldt, De imag. disquis., p. 44 et Susenihl, B. J. LXXXVIII, 12, virgulam post αἰσθησιν delere, post φαντασίαν ponere in scholis maluit II. Jackson || 23. καὶ ante λύπη om. S U W X Soph. || 25. οὐδέπω T U V W X y et Philop. in prooemio ad lib. 1 (11, 1) et ad 411 a, 26 (194, 10), sed hoc loco et ad 415 a, 11 (261, 14. 16) οὐδέν πω, quod etiam Them. legit: cf. Them. pp. 46, 4. 102, 12. 103, 7. || 26. καὶ om. S. Cf. Heinzi crit. adn. ad Them. 46, 5. 102, 13. 103, 7 [immo, 8] || ἐνδέχεται omnes codd. Soph. et Philop. ter hoc loco et ad 411 a, 26 (194, 11), sed ad 415 a, 11 (261, 15) ἐνδέχεται et eam quoque scripturam ferri et ab Alexandro legi tradit ad hunc locum Philop., ἐνδέχεται etiam Them. 46, 5 || χωρίζεσθαι om. X. Cf. Them. l. 1. || 33. τοῦτο...414 a, 1. ζώων cum Torst. in parenthesi posuit Biehl || 33. ποιεῖ S U X P Simpl. 103, 19 Philop. vet. transl. Bek. Trend. Torst., ἐποίησε Soph. || 414 a, 1. διαφορὰς T V X P, διαφορὰν etiam Philop. Simpl. Soph. || 2. τὰς om. E et rc. T, leg. etiam Soph. || 4. de hoc loco ἐπελ...14. ὑποκείμενον cf. Bon. stud. Ar. II, III. 120, ἐπελ δέ...28. φανερόν ἐκ τούτων suspecta videntur Susenihlio, Oecon. p. 84, pro ἐπελ δέ coni. ἐτι δέ Trendl., ἐπελ δέ etiam Soph. || 5. post ἐπιστάμεθα virgulam Bek. Trend. Torst., deleuit Bon. || λέγομεν...

to place, and, if it has sensation, it has also imagination and appetency. For, where there is sensation, there is also pleasure and pain: and, where these are, desire also must of necessity be present. But as regards intellect and the speculative 9 faculty the case is not yet clear. It would seem, however, to be a distinct species of soul, and it alone is capable of separation from the body, as that which is eternal from that which is perishable. The remaining parts of the soul are, 10 as the foregoing consideration shows, not separable in the way that some allege them to be: at the same time it is clear that they are logically distinct. For the faculties of sensation and of opinion taken in the abstract are distinct, since to have sensation and to opine are distinct. And so it is likewise with each of the other faculties above mentioned. Again, while some animals possess 11 all these functions, others have only some of them, others only one. It is this which will differentiate animal from animal. The reason why this is so must be investigated hereafter. The case is similar with the several senses: some animals have all of them, others some of them, others again only one, the most indispensable, that is, touch.

Now "that by which we live and have sensation" is a phrase 12 with two meanings, answering to the two meanings of "that by which we know" (the latter phrase means, firstly, knowledge and, secondly, soul, by either of which we say we know). Similarly that by which we have health means either health itself or a certain part, if not the whole, of the body. Now of these knowledge and health are the shape and in some sort form, the notion and virtual activity, of that which is capable of receiving in the one case knowledge, in the other health: that is to say, it is in that which is acted upon or conditioned that the activity of the causal agencies would seem to take effect. Now the soul is that whereby primarily we live, perceive, and have understanding: therefore it will be a species of

6. ἐπίστασθαι in parenth. posui || λέγω coni. Torst., λέγομεν etiam Simpl. et sine dubio Soph. || δὲ unc. incl. Bon., cui adversatur Bywater, p. 55 || 6. ἐκατέρω...ἐπίστασθαι in parenth. posuit Bon. || 7. ᾧ unc. incl. Bywater || ὑγίειαν X et pr. S, reliqui codd. et Bek. Trend. ὑγίεια, ὑγιεία de coniect. Trend. a Torst. receptum probat Bon., ὑγιεία iam Soph. || 8. ὁλφ. τούτων Bek. Trend., post ὁλφ colon Torst. Bon. || 9. καὶ ante οἶον om. S U X || 10. τῶν δεκτικῶν X Philop. et in paraphr. Them. Simpl. || ὑγιαστοῦ X P Simpl. Philop. Soph. 50, 19, quod probat Hayduck. progr. Gryph. 1873 p. 1, recepit Rodier, ὑγιαστικοῦ ceteri, etiam Bon. Ind. Ar. s.v. Barco || 12. Torst. incipit apodosin ab ἡ ψυχῇ, Bon. ab ὥστε 13, idque recte. || 13. πρώτως, ὥστε Bek. Trend., post πρώτως colon Torst. Bon.

13 καὶ εἶδος, ἀλλ' οὐχ ὕλη καὶ τὸ ὑποκείμενον. τριχῶς γὰρ  
 λεγομένης τῆς οὐσίας, καθάπερ εἵπομεν, ὧν τὸ μὲν εἶδος, 15  
 τὸ δὲ ὕλη, τὸ δὲ ἐξ ἀμφοῖν, τούτων δ' ἡ μὲν ὕλη δύναμις,  
 τὸ δὲ εἶδος ἐντελέχεια, ἐπεὶ τὸ ἐξ ἀμφοῖν ἐμψυχον, οὐ  
 τὸ σῶμά ἐστιν ἐντελέχεια ψυχῆς, ἀλλ' αὕτη σώματός τι-  
 14 νος. καὶ διὰ τοῦτο καλῶς ὑπολαμβάνουσιν οἷς δοκεῖ μῆτ'  
 ἄνευ σώματος εἶναι μῆτε σῶμά τι ἢ ψυχὴ· σῶμα μὲν 20  
 γὰρ οὐκ ἔστι, σώματος δέ τι, καὶ διὰ τοῦτο ἐν σώματι  
 ὑπάρχει, καὶ ἐν σώματι τοιούτῳ, καὶ οὐχ ὥσπερ οἱ πρότε-  
 ρον εἰς σῶμα ἐνήρμοζον αὐτήν, οὐθὲν προσδιορίζοντες ἐν τίνι  
 καὶ ποίῳ, καίπερ οὐδὲ φαινομένου τοῦ τυχόντος δέχεσθαι τὸ  
 15 τυχόν. οὕτω δὲ γίνεται καὶ κατὰ λόγον· ἐκάστου γὰρ ἡ ἐν- 25  
 τελέχεια ἐν τῷ δυνάμει ὑπάρχοντι καὶ τῇ οἰκείᾳ ὕλῃ πέ-  
 φυκεν ἐγγίνεσθαι. ὅτι μὲν οὖν ἐντελεχείᾳ τίς ἐστι καὶ λόγος  
 τοῦ δυνάμει ἔχοντος εἶναι τοιούτου, φανερόν ἐκ τούτων.

3 Τῶν δὲ δυνάμεων τῆς ψυχῆς αἱ λεχθεῖσαι τοῖς μὲν  
 ὑπάρχουσι πᾶσαι, καθάπερ εἵπομεν, τοῖς δὲ τινες ἑνὶ τῶν, 30  
 ἐνίοις δὲ μία μόνη. δυνάμεις δ' εἵπομεν θρεπτικόν, ὄρε-  
 2 κτικόν, αἰσθητικόν, κινητικόν κατὰ τόπον, διανοητικόν. ὑπ-  
 ἀρχει δὲ τοῖς μὲν φυτοῖς τὸ θρεπτικόν μόνον, ἑτέροις δὲ  
 τοῦτό τε καὶ τὸ αἰσθητικόν. εἰ δὲ τὸ αἰσθητικόν, καὶ τὸ ὄρε- 414b  
 κτικόν· ὄρεξις μὲν γὰρ ἐπιθυμία καὶ θυμὸς καὶ βούλησις,  
 τὰ δὲ ζῶα πάντ' ἔχουσι μίαν γε τῶν αἰσθήσεων, τὴν ἀφήν·  
 ᾧ δ' αἰσθησις ὑπάρχει, τούτῳ ἡδονή τε καὶ λύπη καὶ τὸ  
 ἡδύ τε καὶ λυπηρόν, οἷς δὲ ταῦτα, καὶ ἡ ἐπιθυμία· τοῦ 5  
 3 γὰρ ἡδέος ὄρεξις αὕτη. ἔτι δὲ τῆς τροφῆς αἰσθησιν ἔχουσιν·  
 ἡ γὰρ ἀφή τῆς τροφῆς αἰσθησις· ξηροῖς γὰρ καὶ ὑγροῖς  
 καὶ θερμοῖς καὶ ψυχροῖς τρέφεται τὰ ζῶντα πάντα (τούτων  
 δ' αἰσθησις ἀφή, τῶν δ' ἄλλων αἰσθητῶν κατὰ συμβεβη-  
 κός)· οὐθὲν γὰρ εἰς τροφήν συμβάλλεται ψόφος οὐδὲ χρῶμα 10

14. οὐχ ἡ W, οὐχ ὡς S U V X y Simpl. || pro γὰρ conl. δὲ Hayduck. l. i. || 14....  
 19. cf. Bon. stud. Ar. II, III. 58 || 16. δ' om. P || 17. post ἐντελ. colon Bek. Trend.  
 Torst., virgulam Bon. || ἐπεὶ τὸ] ἐπειτα τὸ E (Bek. Rr.) ἐπεὶ τὰ τὸ E (Bhl), ut videtur,  
 ἐπεὶ δὲ τὸ S T P Bek. Trend. in ed. pr. Torst., δὲ auctore Trend. om. Belger, quod  
 probat Bon. stud. Ar. II, III. 58, leg. δὲ Them. Philop. || 20. μὲν om. S U X,  
 leg. Them. Soph. || 23. προσδιορίζαντες S U X Soph., προσδιορίζοντες etiam Philop. ||  
 25. οὕτω] τοῦτο Soph. 51, 38, ubi verbatim laudare videtur || 28. τοιοῦτο εἶναι S U X,  
 εἶναι τοιούτου Them. Soph. || 30. ὥσπερ εἵπομεν W, om. E T y, καθάπερ εἵπομεν etiam  
 Them. Soph. || 31. ὀρεκτικόν post αἰσθητικόν U V X Them. Belg., vulgata tuctur Soph.  
 414 b, i. αὐτό S W X Soph., τοῦτό etiam Philop. || 2. ὄρεξις E (Trend.) || 4. καὶ τὸ]



notion or form, not matter or substratum. Of the three meanings 13 of substance mentioned above, form, matter and the whole made up of these two, matter is potentiality and form is actuality. And, since the whole made up of the two is endowed with soul, the body is not the actuality of soul, but soul the actuality of a particular body. Hence those are right who regard the soul as not 14 independent of body and yet at the same time as not itself a species of body. It is not body, but something belonging to body, and therefore resides in body and, what is more, in such and such a body. Our predecessors were wrong in endeavouring to fit the soul into a body without further determination of the nature and qualities of that body: although we do not even find that of any two things taken at random the one will admit the other. And this result is what we might expect. 15 For the actuality of each thing comes naturally to be developed in the potentiality of each thing: in other words, in the appropriate matter. From these considerations, then, it is manifest that soul is a certain actuality, a notion or form, of that which has the capacity to be endowed with soul.

Of the powers of soul above mentioned, namely, those of 3 nutrition, appetency, sensation, locomotion and understanding, some living things, as we remarked, possess all, others some, others again only one. Plants possess 2 the nutritive faculty only: other things along with this have sensation; and, if sensation, then also appetency: where under appetency we include desire, anger and wish. But all animals have at least one sense, touch: and, where sensation is found, there is pleasure and pain, and that which causes pleasure and pain; and, where these are, there also is desire, desire being appetite for what is pleasurable. Again, they have 3 a sensation concerned with nutriment, touch being such a sense. For it is by what is dry and moist, hot and cold, that all living things are nourished (and these qualities are perceived by touch, whereas the other sensibles are not, except incidentally): for sound, colour and odour contribute nothing to nutriment, while flavour

The vital functions: how distributed.

Appetency implied in touch.

κατὰ τὸ coni. Barco || 5. τε om. ET, leg. Simpl. Soph. || καὶ ἡ om. SU, ἡ om. V Philop. 253, 22 sq. Soph. || 6. *ὑπερὶς ἐστὶν αὐτῇ* STUX, *ἐστὶν ὑπερὶς αὐτῇ* Soph., *ἐστὶν* om. etiam Philop. || δὲ om. EWy || 8. *ζῶα* TUVX Bek. Trend. Torst., *ζῶντα* etiam Them. Philop. 250, 7 et vet. transl. || *τούτων*...9. *συμβεβηκός* in parenth. posui || 9. post *ἀφ᾽* colon vulg. || *τοῖς δ' ἄλλοις αἰσθητοῖς* Torst. et Belg. in ed. alt. Trend., secuti Sophoniam, qui interpretatur *τοῖς δὲ ἄλλοις τῶν αἰσθητῶν*, vulgatam praeter omnes codd. tuentur Simpl. Philop. 252, 36 et Alex. ap. Philop. 253, 13 et, ut videtur, Them. 47, 32 || 10. post *συμβεβηκός* punctum Biehl Rodier || *οὐθέν*...11. *ἀπ᾽* *ἐστὶν* ante *ζηροῖς*...*συμβεβηκός* collocanda censet Christ || 10. *οὐδὲ χρώμα* om. E, tuentur haec verba Them. Philop. Soph.

οὐδὲ ὁσμή, ὁ δὲ χυμὸς ἐν τι τῶν ἀπτῶν ἐστίν. πείνα δὲ καὶ  
 δίψα ἐπιθυμία, καὶ ἡ μὲν πείνα ξηροῦ καὶ θερμοῦ, ἡ δὲ  
 δίψα ψυχροῦ καὶ ὑγροῦ· ὁ δὲ χυμὸς οἶον ἡδυσμὰ τι τούτων  
 ἐστίν. διασαφητέον δὲ περὶ αὐτῶν ὕστερον, νῦν δ' ἐπὶ τοσοῦτον  
 εἰρήσθω, ὅτι τῶν ζώων τοῖς ἔχουσιν ἀφήν καὶ ὄρεξις ὑπάρ- 15  
 4 χει. περὶ δὲ φαντασίας ἄδηλον, ὕστερον δ' ἐπισκεπτέον. ἐνί-  
 οῖς δὲ πρὸς τούτοις ὑπάρχει καὶ τὸ κατὰ τόπον κινητικόν,  
 ἐτέροις δὲ καὶ τὸ διανοητικόν τε καὶ νοῦς, οἶον ἀνθρώποις καὶ  
 εἴ τι τοιοῦτον ἕτερόν ἐστιν ἢ τιμιώτερον.  
 5 δῆλον οὖν ὅτι τὸν αὐτὸν τρόπον εἰς ἂν εἴη λόγος ψυχῆς τε καὶ 20  
 σχήματος· οὔτε γὰρ ἐκεῖ σχῆμα παρὰ τὸ τρίγωνόν ἐστι καὶ τὰ  
 ἐφεξῆς, οὔτ' ἐνταῦθα ψυχὴ παρὰ τὰς εἰρημένας. γίνοιτο δ' ἂν  
 καὶ ἐπὶ τῶν σχημάτων λόγος κοινός, ὃς ἐφαρμόσει μὲν πᾶσιν,  
 ἴδιος δ' οὐδενὸς ἔσται σχήματος. ὁμοίως δὲ καὶ ἐπὶ ταῖς εἰ-  
 ρημέναις ψυχαῖς. διὸ γελοῖον ζητεῖν τὸν κοινὸν λόγον καὶ 25  
 ἐπὶ τούτων καὶ ἐφ' ἐτέρων, ὃς οὐδενὸς ἔσται τῶν ὄντων ἴδιος  
 λόγος οὐδὲ κατὰ τὸ οἰκείον καὶ τὸ ἄτομον εἶδος, ἀφέντας τὸν  
 6 τοιοῦτον. παραπλησίως δ' ἔχει τῷ περὶ τῶν σχημάτων καὶ  
 τὰ κατὰ ψυχὴν· αἰεὶ γὰρ ἐν τῷ ἐφεξῆς ὑπάρχει δυνάμει  
 τὸ πρότερον ἐπὶ τε τῶν σχημάτων καὶ ἐπὶ τῶν ἐμψύχων, 30  
 οἶον ἐν τετραγώνῳ μὲν τρίγωνον, ἐν αἰσθητικῷ δὲ τὸ θρεπτι-  
 κόν. ὥστε καθ' ἕκαστον ζητητέον, τίς ἐκάστου ψυχῆ, οἶον τίς  
 7 φυτοῦ καὶ τίς ἀνθρώπου ἢ θηρίου. διὰ τίνα δ' αἰτίαν τῷ ἐφε-  
 ξῆς οὕτως ἔχουσι, σκεπτέον. ἄνευ μὲν γὰρ τοῦ θρεπτικοῦ τὸ 415a  
 αἰσθητικὸν οὐκ ἔστιν· τοῦ δ' αἰσθητικοῦ χωρίζεται τὸ θρεπτικὸν  
 ἐν τοῖς φυτοῖς. πάλιν δ' ἄνευ μὲν τοῦ ἀπτικοῦ τῶν ἄλλων  
 αἰσθήσεων οὐδεμία ὑπάρχει, ἀφή δ' ἄνευ τῶν ἄλλων ὑπάρ-  
 χει· πολλὰ γὰρ τῶν ζώων οὔτ' ὄψιν οὔτ' ἀκοὴν ἔχουσιν 5  
 οὔτ' ὁσμῆς αἰσθησιν. καὶ τῶν αἰσθητικῶν δὲ τὰ μὲν  
 ἔχει τὸ κατὰ τόπον κινητικόν, τὰ δ' οὐκ ἔχει. τελευταίου

11. post ὁσμή punctum vulg. || 12. θερμοῦ καὶ ξηροῦ SX, ξηρ. καὶ θερ. etiam Them. Simpl. Soph. || 13. ὑγροῦ καὶ ψυχροῦ X Soph., καὶ ψυχ. καὶ ὑγρ. S, ψυχροῦ καὶ ὑγροῦ etiam Them. Simpl. || τι om. S UVX, leg. Philop. || 15. διωρίσθω S UVX Them. Soph. || 18. καὶ post ἀνθρώπων X Philop. 255, 6, καὶ reliqui, etiam Them. Simpl. Soph. || 19. ἐστὶν ἕτερον S UV Them., ἕτερόν ἐστιν ceteri, etiam Simpl. Soph., ἐστὶν om. Philop. || ἢ καὶ τιμ. UX Them. Bek. Trend. Torst., καὶ omisso ἢ Philop., καὶ om. etiam Soph. || 22. ἡ ψυχὴ EVY Simpl., ἡ om. Soph. || γένοιτο S UVX Soph. Bek. Trend. Torst. || 25. κοινὸν «μόνον» conl. Susemihl, τῷ κοινῷ λόγῳ ἀρκεῖσθαι μόνῳ interpretatur Philop. 257, 13. || 26. ἐστὶ S UX P Soph., ἔσται Them. || 27. post λόγος vulg. virgulam sustuli || οὐδὲ δεῖ fort.

is one of the tangible objects. Hunger again, and thirst are forms of desire, the one for what is hot or dry, the other for what is cold or moist. Flavour is, as it were, the seasoning of these. We will deal with these in detail hereafter: at present let it suffice to say that all animals which have the sense of touch are also endowed with appetency. Whether they have imagination is not clear: this, too, must be considered later. Some have in addition <sup>Higher functions.</sup> the power of locomotion. Others—that is to say, man and any other species like man or, possibly, superior to him—have also the thinking faculty and intellect.

From this it is clear that there is one definition of soul exactly <sup>A single definition of soul, as of figure.</sup> as there is one definition of figure: for there is in the one case no figure excepting triangle, quadrilateral and the rest, nor is there in the other any species of soul apart from those above mentioned. Again, a definition might be constructed which should apply to all figures, but not specially to any species of figure. And similarly with the species of soul above enumerated. Hence it would be absurd here as elsewhere to seek a general definition which will not be properly a definition of anything in existence and will not be applicable to the particular irreducible species before us, to the neglect of the definition which is so applicable.

The types of soul resemble the series of figures. For, alike <sup>The ascending scale of vital functions.</sup> in figures and in things animate, the earlier form exists potentially in the later, as, for instance, the triangle potentially in the quadrilateral, and the nutritive faculty in that which has sensation. So that we must examine in each case separately, what is the soul of plant, of man or of beast. Why they are related in this order of succession remains to be considered. There is no sensitive faculty apart from the nutritive: and yet the latter exists without the former in plants. Again, none of the other senses is found apart from touch; while touch is found apart from the others, many animals having neither sight nor hearing nor sense of smell. Also of those which possess sensation, some can move from place to place, others cannot.

Soph. interpretationi accommodatius esse censet Rodier II, 220 || *καὶ τὸ ἄτομον* E T γ, τὸ om. Simpl. et, ut videtur, Soph. 54, 30. Bek. Trend. Torst. || 28. *καὶ τὰ...30. σχημάτων* om. V || 29. *κατὰ] περὶ τὴν* S U V X || 31. *μὲν τὸ τρί.* V Soph. 54, 6 || 32. *ὥστε καὶ καθ'* suscepit Torst. e prima editione E, reliqui omnes om. *καὶ*, etiam Soph. || 33. *τῷ] τὸ* P U Soph., om. V || 415 a, 3. *ὅλον ἐν τοῖς φυτοῖς* suscepit Torst. e prima editione E, *ὅλον* om. reliqui. || 6. *ὁσμήs δλως αἰσθησιν* S T U V X Soph. Bek. Trend., *δλως* om. E (Trend.) γ Torst. Belger.

δὲ καὶ ἐλάχιστα λογισμὸν καὶ διάνοιαν· οἷς μὲν γὰρ ὑπάρχει λογισμὸς τῶν φθαρτῶν, τούτοις καὶ τὰ λοιπὰ πάντα, οἷς δ' ἐκείνων ἕκαστον, οὐ πᾶσι λογισμὸς, ἀλλὰ τοῖς μὲν οὐδὲ φαντασία, τὰ δὲ ταύτῃ μόνῃ ζῶσιν. περὶ δὲ τοῦ θεωρητικοῦ νοῦ ἕτερος λόγος. ὅτι μὲν οὖν ὁ περὶ τούτων ἑκάστου λόγος οὗτος οἰκειότατος καὶ περὶ ψυχῆς, δῆλον.

4 Ἀναγκαῖον δὲ τὸν μέλλοντα περὶ τούτων σκέψιν ποιέσθαι λαβεῖν ἕκαστον αὐτῶν τί ἐστίν, εἴθ' οὕτως περὶ τῶν ἐχομένων καὶ περὶ τῶν ἄλλων ἐπιζητεῖν. εἰ δὲ χρὴ λέγειν τί ἕκαστον αὐτῶν, οἷον τί τὸ νοητικὸν ἢ τὸ αἰσθητικὸν ἢ τὸ θρεπτικόν, πρότερον ἔτι λεκτέον τί τὸ νοεῖν καὶ τί τὸ αἰσθάνεσθαι· πρότεραι γάρ εἰσι τῶν δυνάμεων αἱ ἐνέργειαι καὶ αἱ πράξεις κατὰ τὸν λόγον. εἰ δ' οὕτως, τούτων δ' ἔτι πρότερα τὰ ἀντικείμενα δεῖ τε θεωρηκεῖναι, περὶ ἐκείνων πρῶτον ἂν δεοί διορίσαι διὰ τὴν αὐτὴν αἰτίαν, οἷον περὶ τροφῆς καὶ αἰσθητοῦ καὶ νοητοῦ. ὥστε πρῶτον περὶ τροφῆς καὶ γεννήσεως λεκτέον· ἡ γὰρ θρεπτικὴ ψυχὴ καὶ τοῖς ἄλλοις ὑπάρχει, καὶ πρώτη καὶ κοινοτάτη δυνάμεις ἐστὶ ψυχῆς, καθ' ἣν ὑπάρχει τὸ ζῆν ἅπασιν. ἥς ἐστὶν ἔργα γεννῆσαι καὶ τροφὴν χρῆσθαι· φυσικώτατον γὰρ τῶν ἔργων τοῖς ζῶσιν, ὅσα τέλεια καὶ μὴ πηρώματα ἢ τὴν γένεσιν αὐτομάτην ἔχει, τὸ ποιῆσαι ἕτερον οἷον αὐτό, ζῶον μὲν ζῶον, φυτὸν δὲ φυτόν, ἵνα τοῦ αἰεὶ καὶ τοῦ θεοῦ μετέχωσιν ἢ δύνανται· πάντα γὰρ ἐκείνου ὀρέγεται, καὶ ἐκείνου ἕνεκα πράττει ὅσα πράττει κατὰ φύσιν. τὸ δ' οὐ ἕνεκα διττόν, τὸ μὲν οὐ, τὸ δὲ φ. ἐπεὶ οὖν κοινωνεῖν ἀδυνατεῖ τοῦ αἰεὶ καὶ τοῦ θεοῦ τῇ συν-εχείρᾳ, διὰ τὸ μὴδὲν ἐνδέχεσθαι τῶν φθαρτῶν ταῦτ' οὐ καὶ ἐν ἀριθμῷ διαμένειν, ἢ δύνανται μετέχειν ἕκαστον, κοινωνεῖ 5

8. ἐλάχιστον S U V W X, ἐλάχιστα etiam Philop. Soph. || διάνοιαν, οἷον ὁ (ὁ om. E et Soph.) ἄνθρωπος ἢ τι (ἢ εἰ τι Soph.) τοιοῦτον ἄλλο ὑπάρχει. οἷς Wy et a prima manu margo E (Trend.) et Soph. || 11. ταύτῃ μόνον S U X, ταύτῃ μόνῃ Them. Philop. Soph. || 15. τί ἐστίν om. S U X, leg. Them. Simpl. Philop. || 16. ἢ καὶ S U X Bek. Trend., ἢ om. Simpl. Soph. Torst. || 18. πρότεραι || πρότερον S T U V W X Bek. Trend., πρότεραι E (Trend. Bus.) y Them. Soph. Torst. Belger in ed. alt. Trend. || 20. τὸν om. E Soph. || δ' ante ἔτι omnes codd., insertum E (Trend.) || 21. δεῖ τε θ. om. W, leg. Philop. Soph., διὰ τὴν αὐτὴν αἰτίαν post τε θεωρηκεῖναι transponenda esse censet Christ || 23. γενέσεως P, καὶ γεννήσεως cleri vult Essen, progr. Stargard 1866, p. 23. || 24. καὶ ante τοῖς om. V, ante πρ. om. U V X y || 25. ἥς οἷς V W, ἥς etiam Them. Philop. Soph. || 26. γεννήσαι τε καὶ W, etiam Philop. Soph. || χρῆσθαι S T U V X Soph. Trend., χρῆσθαι Philop. ad hunc locum et ad 416 a, 18 (279, 1) || φυσικώτατον E (Trend.) et pr. y, φυσικώτατον etiam Simpl. Philop. Soph. || 27. ζῶοις S X, ζῶσι Them.

Lastly and most rarely, they have the reasoning faculty and thought. For those perishable creatures which possess reason are endowed with all the other species of soul, but not all those which possess each of the other faculties have reason. Indeed, some of them have not even imagination, while others live by imagination alone. As for the speculative intellect, it calls for a separate discussion. Meanwhile it is clear that an account of the several faculties is at the same time the most appropriate account of soul.

The enquirer who approaches this subject must ascertain what <sup>4</sup> each of these faculties is before he proceeds to investigate the questions next in order and so forth. But if we are asked to state what each of these is; that is to say, what the cognitive, sensitive and nutritive faculties respectively are, we must begin by stating what the act of thinking is and what the act of sensation is. For activities and functions are logically prior to faculties. But, if so, and if a study of the correlative objects should have preceded, these objects will for the same reason have to be defined first: I mean, nutriment and the sensible and intelligible. Con-<sup>2</sup>sequently we have first to treat of nutriment and of generation.

The nutritive soul belongs to other living things as well as man, being the first and most widely distributed faculty, in virtue of which all things possess life. Its functions are reproduction and assimilation of nutriment. For it is the most natural function in all living things, if perfect and not defective or spontaneously generated, to reproduce their species; animal producing animal and plant plant, in order that they may, so far as they can, share in the eternal and the divine. For it is that which all things yearn after, and that is the final cause of all their natural activity. Here final cause is an ambiguous term, which denotes either the purpose for which, or the person for whom, a thing is done. Since, then, individual things are incapable of sharing continuously in the eternal and the divine, because nothing in the world of perishables can abide numerically one, and the same, they partake in the eternal and

Philop. Soph. || 28. *αὐτομάτων* S U W Soph., *αὐτομάτην* Them. Simpl. Philop. || 29. *μετέχουσιν* E (Trend.) et U Soph. v. l. (*μετέχωσιν* e codd. Hayduck, 57, 1), *μετέχωσιν* etiam Them. Philop. || 415 b, 1. *καὶ ἐκείνου* T U V W et E (Bus.) Them., *κἀκείνου* reliqui ante Biehlum omnes, etiam Soph. || 2. post *φύσιν* et post 3. *φ*, pro vulg. punctis, cola posuit Rodier || τὸ δ' οὐ...3. *φ* unc. incl. Trend. (cf. b, 20), leg. haec verba hoc loco Them. Philop. Simpl. Soph. || 3. *ἐπεὶ οὖν...τῇ συνεχείᾳ*] *καθόσον δύναται· δύναται δὲ τῇ συνεχείᾳ μόνῃ* in interpr. Them. 50, 19 || 4. τὸ αὐτὸ S U X Soph., *ταὐτὸ* Them. || 5. *ταύτη κοινῶν* S U X Them.

ταύτη, τὸ μὲν μᾶλλον τὸ δ' ἦττον· καὶ διαμένει οὐκ αὐτὸ ἀλλ' οἷον αὐτό, ἀριθμῷ μὲν οὐχ ἔν, εἶδει δ' ἔν.

- 3 ἔστι δὲ ἡ ψυχὴ τοῦ ζῶντος σώματος αἰτία καὶ ἀρχή. ταῦτα δὲ πολλαχῶς λέγεται. ὁμοίως δ' ἡ ψυχὴ κατὰ τοὺς διωρισμένους τρόπους τρεῖς αἰτία· καὶ γὰρ ὅθεν ἡ κίνησις αὐτῇ, καὶ οὐ<sup>10</sup> ἔνεκα, καὶ ὡς ἡ οὐσία τῶν ἐμψύχων σωμάτων ἡ ψυχὴ  
4 αἰτία. ὅτι μὲν οὖν ὡς οὐσία, δῆλον· τὸ γὰρ αἴτιον τοῦ εἶναι πᾶσιν ἡ οὐσία, τὸ δὲ ζῆν τοῖς ζῶσι τὸ εἶναί ἐστιν, αἰτία δὲ καὶ ἀρχὴ τούτου ἡ ψυχὴ. ἔτι τοῦ δυνάμει ὄντος λόγος ἡ  
5 ἐντελέχεια. φανερόν δ' ὡς καὶ οὐ ἔνεκεν ἡ ψυχὴ αἰτία·<sup>15</sup> ὥσπερ γὰρ ὁ νοὺς ἔνεκά του ποιεῖ, τὸν αὐτὸν τρόπον καὶ ἡ φύσις, καὶ τοῦτ' ἔστιν αὐτῆς τέλος. τοιοῦτον δ' ἔν τοῖς ζῴοις ἡ ψυχὴ καὶ κατὰ φύσιν· πάντα γὰρ τὰ φυσικὰ σώματα τῆς ψυχῆς ὄργανα, καὶ καθάπερ τὰ τῶν ζώων, οὕτω καὶ τὰ τῶν φυτῶν, ὡς ἔνεκα τῆς ψυχῆς ὄντα. διττῶς δὲ τὸ οὐ<sup>20</sup>  
6 ἔνεκα, τό τε οὐ καὶ τὸ ᾧ. ἀλλὰ μὴν καὶ ὅθεν πρῶτον ἡ κατὰ τόπον κίνησις, ψυχὴ. οὐ πᾶσι δ' ὑπάρχει τοῖς ζῶσιν ἡ δύναμις αὕτη. ἔστι δὲ καὶ ἀλλοίωσις καὶ αὔξησις κατὰ ψυχὴν· ἡ μὲν γὰρ αἰσθησις ἀλλοίωσίς τις εἶναι δοκεῖ, αἰσθάνεται δ' οὐθὲν ὁ μὴ μετέχει ψυχῆς. ὁμοίως δὲ καὶ περὶ αὐ<sup>25</sup>  
ξήσεώς τε καὶ φθίσεως ἔχει· οὐδὲν γὰρ φθίνει οὐδ' αὔξεται φυσικῶς μὴ τρεφόμενον, τρέφεται δ' οὐθὲν ὁ μὴ κοινωνεῖ  
7 ζωῆς. Ἐμπεδοκλῆς δ' οὐ καλῶς εἶρηκε τοῦτο, προστιθεὶς τὴν αὔξησιν συμβαίνειν τοῖς φυτοῖς κάτω μὲν συρριζουμένοις διὰ τὸ τὴν γῆν οὕτω φέρεσθαι κατὰ φύσιν, ἄνω δὲ διὰ τὸ<sup>416a</sup>  
πῦρ ὡσαύτως. οὔτε γὰρ τὸ ἄνω καὶ κάτω καλῶς λαμβάνει· οὐ γὰρ τὸ αὐτὸ πᾶσι τὸ ἄνω καὶ κάτω καὶ τῷ παντί, ἀλλ' ὡς ἡ κεφαλὴ τῶν ζώων, οὕτως αἱ ρίζαι τῶν φυτῶν,

7. post δ' ἔν addit διόπερ τὸ σπέρμα τῶν ζώων καὶ τῶν φυτῶν ὄργανόν ἐστι τῆς ψυχῆς T, et singulis verbis mutatis vel omissis V X U m, apud veteres commentatores praeter Sophoniam nullum huius additamenti vestigium || 8. ἔστι δὲ...28. ζωῆς num ab Ar. scripta fuerint dubitat Susemihl, Oecon., p. 84, et ne sequentia quidem 28. Ἐμπεδοκλῆς...416 a, 18 ὅλης satis conexa esse cum praecedentibus et sequentibus opinatur || 9. ὁμοῦς S U W X, ὁμοίως etiam Them. Philop. || διηρημένους S U et pr. X, διωρισμένους Them. Philop. 273, 9 || 10. αὐτῇ unc. inclusit Biehl, αὐτῇ E S, αὐτῇ Rodier, αὐτῇ reliqui omnes || 11. ἡ ante οὐσία om. U X || 13. αἴτιον E, αἰτία etiam Philop. Soph. || 14. τούτου E fol. 1 r<sup>o</sup> (vid. append.) P Soph. 58, 31 et, ut videtur, Simpl. 111, 13 Philop. 271, 34. 273, 19 sq., recepit Rodier, ceteri et scripti et impressi τούτων || τοῦ ἐν δυν. S U X, ἐν om. Simpl. || 15. ἔνεκα S T U V W X Soph. || 16. νοεῖ E S T V, ποιεῖ etiam Philop. Soph. || 17. αὐτῇ U V W X Soph. Bek. Trend.,

divine, each in the only way it can, some more, some less. That is to say, each persists, though not in itself, yet in a representative which is specifically, not numerically, one with it.

Now the soul is cause and origin of the living body. But cause 3 and origin are terms used in various senses: accordingly soul is cause in the three senses of the word already determined. For the soul is the cause of animate bodies as being in itself the origin of motion, as final cause and as substance. Clearly it is so as substance, substance 4 being the cause of all existence. And for living things existence means life, and it is the soul which is the cause and origin of life. Furthermore, actuality is the notion or form of that which has potential existence. Manifestly, too, the soul is final cause. For 5 nature, like intelligence, acts for a purpose, and this purpose is for it an end. Such an end the soul is in animals, and this in the order of nature, for all the natural bodies are instruments of soul: and this is as true of the bodies of plants as of those of animals, shewing that all are means to the soul as end; where end has two senses, the purpose for which and the person for whom. Moreover, 6 the soul is also the origin of motion from place to place, but not all living things have this power of locomotion. Qualitative change, also, and growth are due to soul. For sensation is supposed to be a sort of qualitative change, and nothing devoid of soul has sensation. The same holds of growth and decay. For nothing undergoes natural decay or growth except it be nourished, and nothing is nourished unless it shares in life.

Empedocles is mistaken in adding that in plants, in so far as 7 they strike their roots downwards, growth takes place because the earth in them has a natural tendency in this direction and that, when they shoot upwards, it is because the fire in them has a similar tendency upwards. He is wrong in his view of up and down. For up and down are not the same for all individuals as for the universe. On the contrary, the roots of plants correspond to the heads of animals, if we are to

*αὐτῆς* etiam Philop. Torst. || 18. *καὶ* ante *κατὰ φύσιν* excepto U omnes codd., om. Trend., unc. incl. Torst., *καὶ* leg. etiam Simpl. Soph. || scripsisse Arist. *ἐμψυχὰ σώματα*, suspicatur Torst. || 20. *διττῶς...* 21. *ᾧ* leg. haec verba hoc loco etiam Simpl. Philop. Soph. || 25. *ψυχὴν ἔχει* S U X Them. Soph., *ἔχει ψυχὴν* W Bek. Trend., *μετέχει ψυχῆς* E T V Torst. || 26. *αὐξάνεται* T V X, *αὔξεται* etiam Them. Philop. || 27. *μετέχει ψυχῆς* W, *μετέχει ζωῆς* Philop., *κοινωνεῖ ζωῆς* Them. Simpl. Soph. || 28. post *ταῦτο* virg. om. Diels || *προσθέσει* coní. Karsten, Emped., p. 454 || 29. *ῥιζοῦμένων* S U V W X, *ῥιζοῦμένων* T Soph., verbum simplex etiam Them. || 416 a, 3. *τὸ αὐτὸ* E (Bus.) Them. Simpl. Philop. Torst., *ταῦτὸ* reliqui, etiam Soph. || *καὶ τῷ παντί* unc. incl. Susemihl.

εἰ χρὴ τὰ ὄργανα λέγειν ἕτερα καὶ ταῦτὰ τοῖς ἔργοις. 5  
 πρὸς δὲ τούτοις τί τὸ συνέχον εἰς τὰναντία φερόμενα τὸ πῦρ  
 καὶ τὴν γῆν; διασπασθήσεται γάρ, εἰ μὴ τι ἔσται τὸ κω-  
 λύν· εἰ δ' ἔσται, τοῦτ' ἐστὶν ἡ ψυχὴ καὶ τὸ αἷτιον τοῦ αὐ-  
 8 ξάνεσθαι καὶ τρέφεσθαι. δοκεῖ δέ τισιν ἡ τοῦ πυρὸς φύσις  
 ἀπλῶς αἰτία τῆς τροφῆς καὶ τῆς αὐξήσεως εἶναι· καὶ γὰρ 10  
 αὐτὸ φαίνεται μόνον τῶν σωμάτων ἢ τῶν στοιχείων τρεφό-  
 μενον καὶ αὐξόμενον. διὸ καὶ ἐν τοῖς φυτοῖς καὶ ἐν τοῖς  
 ζώοις ὑπολάβοι τις ἂν τοῦτο εἶναι τὸ ἐργαζόμενον. τὸ δὲ  
 συναίτιον μὲν πῶς ἐστίν, οὐ μὴν ἀπλῶς γε αἷτιον, ἀλλὰ  
 μᾶλλον ἡ ψυχὴ· ἡ μὲν γὰρ τοῦ πυρὸς αὐξησις εἰς ἅπει- 15  
 ρον, ἕως ἂν ᾗ τὸ καυστόν, τῶν δὲ φύσει συνισταμένων πάν-  
 των ἐστὶ πέρας καὶ λόγος μεγέθους τε καὶ αὐξήσεως· ταῦτα  
 δὲ τῆς ψυχῆς, ἀλλ' οὐ πυρός, καὶ λόγου μᾶλλον ἢ ὕλης.  
 9 ἐπεὶ δ' ἡ αὐτὴ δύναμις τῆς ψυχῆς θρεπτικὴ καὶ γεννητικὴ,  
 καὶ περὶ τροφῆς ἀναγκαῖον διωρίσθαι πρῶτον· ἀφορίζεται γὰρ 20  
 πρὸς τὰς ἄλλας δυνάμεις τῷ ἔργῳ τούτῳ. δοκεῖ δ' εἶναι ἡ  
 τροφή τὸ ἐναντίον τῷ ἐναντίῳ, οὐ πᾶν δὲ παντί, ἀλλ' ὅσα τῶν  
 ἐναντίων μὴ μόνον γένεσιν ἐξ ἀλλήλων ἔχουσιν ἀλλὰ καὶ  
 αὐξησιν· γίνεται γὰρ πολλὰ ἐξ ἀλλήλων, ἀλλ' οὐ πάντα  
 ποσά, οἷον ὑγιᾶς ἐκ κάμνοντος. φαίνεται δ' οὐδ' ἐκεῖνα τὸν 25  
 αὐτὸν τρόπον ἀλλήλοις εἶναι τροφή, ἀλλὰ τὸ μὲν ὕδωρ  
 τῷ πυρὶ τροφή, τὸ δὲ πῦρ οὐ τρέφει τὸ ὕδωρ. ἐν μὲν οὖν  
 τοῖς ἀπλοῖς σώμασι ταῦτ' εἶναι δοκεῖ μάλιστα τὸ μὲν  
 10 τροφή τὸ δὲ τρεφόμενον. ἀπορίαν δ' ἔχει· φασὶ γὰρ οἱ  
 μὲν τὸ ὅμοιον τῷ ὁμοίῳ τρέφεσθαι, καθάπερ καὶ αὐξά- 30  
 νεσθαι, τοῖς δ' ὥσπερ εἵπομεν τοῦμπαλιν δοκεῖ, τὸ ἐναντίον  
 τῷ ἐναντίῳ, ὡς ἀπαθοὺς ὄντος τοῦ ὁμοίου ὑπὸ τοῦ ὁμοίου,  
 τὴν δὲ τροφήν μεταβάλλειν καὶ πέττεσθαι· ἡ δὲ μετα-  
 βολὴ πᾶσιν εἰς τὸ ἀντικείμενον ἢ τὸ μεταξύ. ἔτι πάσχει  
 τι ἡ τροφή ὑπὸ τοῦ τρεφομένου, ἀλλ' οὐ τοῦτο ὑπὸ τῆς 35

5. post *ἔργοις* addunt edit. Ald. et Basil.: τὸ δ' αὐτὸ λέγειν ὄργανον ᾧ ἂν ᾗ τὸ αὐτὸ  
 ἔργον, quae fluxisse e prima editione iudicat Torst., nihil huius additamenti habent  
 veteres interpretes || 7. κωλύσον S U V W Soph. Bek. Trend. || 11. ἡ τῶν στοιχείων unc.  
 incl. Torst., leg. haec verba omissis verbis τῶν σωμάτων ἢ Them. Simplic., Soph. habet  
 τῶν σωμ. καὶ τῶν στοιχ. 59, 33 || 12. αὐξανόμενον S U V W X Them., αὐξόμενον etiam  
 Philop. Soph. || 15. ἡ ante ψ. insert. E<sub>1</sub> (Bhl.), leg. Them. || 17. μεγέθους τε καὶ | τε om.  
 T U V X, καὶ μεγέθους καὶ S Them. || 18. τῆς om. S U V W X Bek. Trend. Them. Soph.  
 et, ut videtur, Philop. 278, 9 || 20. καὶ περὶ E T W, καὶ om. Philop. Them. Bek. Trend.



make identity and diversity of organs depend upon their functions. Besides, what is it that holds together the fire and the earth, tending, as they do, in opposite directions? For they will be rent asunder, unless there is something to prevent it: while, if there is, it is this which is the soul and the cause of growth and nourishment.

Some hold the nature of fire to be singly and solely the cause 8  
of nourishment and growth. For it would seem that fire  
**Fire not  
the cause  
of growth.** is the only body or element which of itself is nourished  
and grows. Hence fire might be supposed to be the  
operative cause, both in plants and animals. Whereas, though it is  
in a sense a joint cause, it is not a cause absolutely: it is rather the  
soul which is so. For fire goes on growing to infinity, as long  
as there is fuel to be consumed, but in natural wholes there is  
always a limit or proportion which determines growth and size.  
But this belongs to the soul and not to fire, to form rather than  
to matter.

The nutritive faculty of the soul being the same as the repro- 9  
ductive, it is necessary first to give a definition of nutriment. For  
it is by the nutritive function that this faculty is separated off  
from the others. The common view is that contrary is nutriment  
**Nutrition.** to contrary; though not in every case, but wherever each  
of two contraries is not only generated by, but derives  
growth from, the other. For many things are derived from one  
another, but not all of them are quantities: thus the sick man  
becomes well. But it is found that even the contraries supposed  
to derive growth from each other are not fed by one another in the  
same way: while water serves to feed fire, fire is not nutriment  
to water. It would seem, then, that it is in the simple bodies  
above all that of two contraries one is nutriment and the other  
is nourished. Yet here is a difficulty. It is said by the one 10  
side that like is nourished by, as well as derives its growth from,  
like; while the others, again, as we explained, hold that con-  
trary is nourished by contrary, on the ground that like cannot be  
affected by like, while food undergoes change and is digested.  
Now change is always in the direction of the opposite, or of the  
intermediate state. Further, nutriment is acted upon by that  
which it nourishes, and not the latter by the former: just as  
Torst. || διορίσαι U W Soph., διορίσασθαι γ Them., διορίσθαι etiam Philop. || 23. γέννησιν  
E, γένεσιν Soph. et, ut videtur, Them. 51, 30 || 24. πάντα om. S U X γ et corr. E ||  
25. ποσά om. U W, in rasura E (Trend.) || 28. ἀλλοις S U X Philop., ἀπλοῖς etiam Soph. ||  
32. ἐπὶ τοῦ ὁμοίου om. E W, tuentur Them. Philop. || 34. τὸ post ἡ insert. E (Stapf.),  
καὶ τὸ Them. codd. (ex Arist. corr. ἡ τὸ Heinze) Philop.

τροφῆς, ὥσπερ οὐδ' ὁ τέκτων ὑπὸ τῆς ὕλης, ἀλλ' ὑπ' ἐκεί- 416b  
 νου αὐτῇ· ὁ δὲ τέκτων μεταβάλλει μόνον εἰς ἐνέργειαν ἐξ  
 11 ἀργίας. πότερον δ' ἐστὶν ἡ τροφή τὸ τελευταῖον προσγινό-  
 μενον ἢ τὸ πρῶτον, ἔχει διαφοράν. εἰ δ' ἄμφω, ἀλλ' ἡ  
 μὲν ἀπεπτος ἡ δὲ πεπεμμένη, ἀμφοτέρως ἂν ἐνδέχοιτο τὴν 5  
 τροφήν λέγειν· ἡ μὲν γὰρ ἀπεπτος, τὸ ἐναντίον τῷ ἐναν-  
 τίῳ τρέφεται, ἡ δὲ πεπεμμένη, τὸ ὅμοιον τῷ ὁμοίῳ. ὥστε  
 φανερόν ὅτι λέγουσί τινα τρόπον ἀμφοτέροι καὶ ὀρθῶς καὶ  
 12 οὐκ ὀρθῶς. ἐπεὶ δ' οὐθὲν τρέφεται μὴ μετέχον ζωῆς, τὸ ἔμ-  
 ψυχον ἂν εἴη σῶμα τὸ τρεφόμενον, ἡ ἔμψυχον, ὥστε καὶ 10  
 13 ἡ τροφή πρὸς ἔμψυχόν ἐστι καὶ οὐ κατὰ συμβεβηκός. ἐστι  
 δ' ἕτερον τροφῇ καὶ αὐξητικῶ εἶναι· ἡ μὲν γὰρ ποσόν τι  
 τὸ ἔμψυχον, αὐξητικόν, ἡ δὲ τόδε τι καὶ οὐσία, τροφή·  
 σώζει γὰρ τὴν οὐσίαν, καὶ μέχρι τούτου ἐστὶν ἕως ἂν  
 τρέφεται· καὶ γενέσεως ποιητικόν, οὐ τοῦ τρεφομένου, ἀλλ' 15  
 οἶον τὸ τρεφόμενον· ἡδὴ γάρ ἐστιν αὐτοῦ ἡ οὐσία, γεννᾷ δ'  
 οὐθὲν αὐτὸ ἐαυτό, ἀλλὰ σώζει. ὥσθ' ἡ μὲν τοιαύτη τῆς  
 ψυχῆς ἀρχὴ δύναμις ἐστὶν οἷα σώζειν τὸ ἔχον αὐτὴν ἡ  
 τοιοῦτον, ἡ δὲ τροφή παρασκευάζει ἐνεργεῖν. διὸ στερηθὲν  
 14 τροφῆς οὐ δύναται εἶναι. ἐπεὶ δ' ἐστὶ τρία, τὸ τρεφόμενον 20  
 καὶ ᾧ τρέφεται καὶ τὸ τρέφον, τὸ μὲν τρέφον ἐστὶν ἡ  
 πρώτη ψυχὴ, τὸ δὲ τρεφόμενον τὸ ἔχον ταύτην σῶμα, ᾧ  
 15 δὲ τρέφεται, ἡ τροφή. ἐπεὶ δὲ ἀπὸ τοῦ τέλους ἅπαντα  
 προσαγορεύειν δίκαιον, τέλος δὲ τὸ γεννῆσαι οἶον αὐτό,  
 16 εἴη ἂν ἡ πρώτη ψυχὴ γεννητικὴ οἶον αὐτό. ἐστὶ δὲ ᾧ τρέ- 25  
 φεται διττόν, ὥσπερ καὶ ᾧ κυβερνᾷ, καὶ ἡ χεὶρ καὶ τὸ πη-  
 δάλιον, τὸ μὲν κινοῦν καὶ κινούμενον, τὸ δὲ κινούμενον <μόνον>.

416 b, 3. προσκρινόμενον in interpr. Them. Philop., προσγινόμενον etiam Soph. ||  
 11. πρὸς τὸ ἔμψ. Them. Simpl., post ἔμψυχον addendum ἡ ἔμψυχον aut καὶ delendum  
 censet Susemihl || 12. τροφή E Soph. v. 1. (τροφῇ e codd. Hayduck 62, 6), τροφή etiam  
 Them. || 14. ἂν καὶ τρέφῃ T W, ἂν τρέφῃ E (Stapf.), ἂν τρέφῃται P Soph., ἂν τρέφῃ γ,  
 vulgo ἂν καὶ τρέφῃται || 15. γεννήσεως E S Soph., γενέσεως etiam Them. Philop. || post  
 ποιητικόν virgulam posuit Torst. || 16. αὐτοῦ ἡ οὐσία S T V W X Soph., ἡ οὐσία αὐτοῦ  
 Philop., αὐτῇ ἡ οὐσία E U vet. transl. Bek. Trend., Them. interpretatur τοῦτο γὰρ ἐστιν,  
 unc. incl. haec verba Torst. || 17. αὐτὸ om. E (Trend.) et T V W, leg. Philop. Soph. ||  
 18. ἔχον etiam Philop. Soph., δεχόμενον E W y || 22. ταύτην T X y et E (Bus.) et, ut  
 videtur, Them. 53, 19, αὐτὴν reliqui ante Biehlium omnes, etiam Philop. Soph. ||  
 23. ἐπεὶ δὲ...25. αὐτό collocanda esse ante 20 ἐπεὶ censet Torst., eodem loco, quo  
 vulgata, haec verba legerunt Them. Philop. Soph. || 25. γεννητικόν E S T W X,  
 γεννητικὴ etiam Soph. || τρέφει T y et, ut videtur, Them. 53, 26, τρέφεται etiam Soph. ||

the carpenter is not affected by his material, but on the contrary the material by the carpenter. The carpenter merely passes to activity from inaction. But it makes a difference whether by 11 nutriment we mean the final, or the primary, form of what is added. If both are nutriment, the one as undigested, the other as digested, it will be possible to use the term nutriment in conformity with both theories. For, in so far as it is undigested, contrary is nourished by contrary: and, in so far as it is digested, like by like. So that clearly both sides are in a manner partly right and partly wrong. But, since nothing is nourished unless it possesses life, 12 that which is nourished must be the animate body as such: so that nutriment also is relative to the animate being which it nourishes: and this not incidentally merely.

There is, however, a difference between nutritivity and con- 13  
 Growth. ducivity to growth. In so far as the animate thing is quantitative, what is taken promotes growth; in so far as it is a definite individual, what is taken nourishes. For the animate thing preserves its substance or essential nature and exists as long as it is nourished: and it causes the production, not of that which is nourished, but of another individual like it. Its essential nature already exists, and nothing generates itself, it only maintains its existence. Hence the above described principle of the soul is the power to preserve in existence that which possesses it in so far as it is a definite individual, while nutrition prepares it for activity. Therefore it cannot live when deprived of nutriment. There are, then, these three things, that which is nourished, that 14 with which it is nourished, and that which nourishes it. The last of the three is the primary soul, that which is nourished is the body which contains the soul, that wherewith it is nourished is nutriment. As, however, it is right to name all things from the 15 end they subserve, and the end here is reproduction of the species, the primary soul is that which is capable of reproducing the species. That with which the living thing is nourished may be 16 understood in two senses, just as that with which one steers may mean the hand or the rudder; the former, the hand, both causing motion and being moved, the latter,

Vital heat  
and nutri-  
ment.

26. καὶ ante ᾧ om. S U W X || καὶ ἡ χεὶρ E V γ, καὶ om. reliqui et scripti et ante Biehlium impressi omnes, leg. Simpl. et sine dubio Them., qui interpretatur τῇ τε χειρὶ καὶ || 27. κινούμενον <μόνον>] κινούμενον E sine rasura (Trend.) Rodier, reliqui codd. κινούν μόνον, etiam Simpl. Alex., teste Philopono, vet. transl., Bek. Trend. Torst., κινούμενον μόνον, ut videtur, Them. 53, 30 sqq., κινούμενον μόνον interpretatur Philop., κινούμενον μόνως Soph., κινούμενον μόνον defendit etiam Dittenberger p. 1613.

πάσαν δ' ἀναγκαῖον τροφήν δύνασθαι πέττεσθαι, ἐργάζεται  
δὲ τὴν πέψιν τὸ θερμόν· διὸ πᾶν ἔμψυχον ἔχει θερμότητα.  
τύπῳ μὲν οὖν ἡ τροφή τί ἐστὶν εἴρηται· διασαφητέον δ' 30  
ἐστὶν ὕστερον περὶ αὐτῆς ἐν τοῖς οἰκείοις λόγοις.

5 Διωρισμένων δὲ τούτων λέγωμεν κοινῇ περὶ πάσης αἰ-  
σθήσεως. ἡ δ' αἰσθησις ἐν τῷ κινεῖσθαι τε καὶ πάσχειν  
συμβαίνει, καθάπερ εἴρηται· δοκεῖ γὰρ ἀλλοίωσις τις εἶ-  
ναι. φασὶ δέ τινες καὶ τὸ ὅμοιον ὑπὸ τοῦ ὁμοίου πάσχειν. 35  
τοῦτο δὲ πῶς δυνατὸν ἢ ἀδύνατον, εἰρήκαμεν ἐν τοῖς καθόλου 417a  
2 λόγοις περὶ τοῦ ποιεῖν καὶ πάσχειν. ἔχει δ' ἀπορίαν διὰ τί  
καὶ τῶν αἰσθήσεων αὐτῶν οὐ γίνεται αἰσθησις, καὶ διὰ τί  
ἄνευ τῶν ἔξω οὐ ποιοῦσιν αἰσθησιν, ἐνότος πυρὸς καὶ γῆς καὶ  
τῶν ἄλλων στοιχείων, ὧν ἐστὶν ἡ αἰσθησις καθ' αὐτὰ ἢ τὰ 5  
συμβεβηκότα τούτοις. δηλὸν οὖν ὅτι τὸ αἰσθητικὸν οὐκ ἐστὶν  
ἐνεργεία, ἀλλὰ δυνάμει μόνον. διὸ καθάπερ τὸ καυστὸν οὐ  
καίεται αὐτὸ καθ' αὐτὸ ἄνευ τοῦ καυστικοῦ· ἔκαιε γὰρ ἂν  
ἑαυτό, καὶ οὐθὲν ἐδεῖτο τοῦ ἐντελεχείᾳ πυρὸς ὄντος. ἐπειδὴ  
δὲ τὸ αἰσθάνεσθαι λέγομεν διχῶς (τό τε γὰρ δυνάμει ἀκοῦον 10  
καὶ ὁρῶν ἀκούειν καὶ ὁρᾶν λέγομεν, κἂν τύχῃ καθεύδον, καὶ  
τὸ ἤδη ἐνεργοῦν), διχῶς ἂν λέγοιτο καὶ ἡ αἰσθησις, ἡ μὲν  
ὡς δυνάμει, ἡ δὲ ὡς ἐνεργεία. ὁμοίως δὲ καὶ τὸ αἰσθάνε-  
3 σθαι, τό τε δυνάμει ὄν καὶ τὸ ἐνεργεία. πρῶτον μὲν οὖν ὡς  
τοῦ αὐτοῦ ὄντος τοῦ πάσχειν καὶ τοῦ κινεῖσθαι καὶ τοῦ ἐνεργεῖν 15  
λέγωμεν· καὶ γὰρ ἐστὶν ἡ κίνησις ἐνέργειά τις, ἀτελὴς μὲν-  
τοι, καθάπερ ἐν ἑτέροις εἴρηται. πάντα δὲ πάσχει καὶ κινεῖται  
ὑπὸ τοῦ ποιητικοῦ καὶ ἐνεργείᾳ ὄντος. διὸ ἐστὶ μὲν ὡς ὑπὸ τοῦ  
ὁμοίου πάσχει, ἐστὶ δὲ ὡς ὑπὸ τοῦ ἀνομοίου, καθάπερ εἶπο-  
μεν· πάσχει μὲν γὰρ τὸ ἀνόμοιον, πεπονθὸς δ' ὁμοίον ἐστὶν. 20

32. λέγομεν VWX Them. Soph., λέγωμεν etiam Alex. ἀπ. καὶ λίσ. 82, 23 || 33. τε]   
τι STWX et sine dubio Them. Simpl. Marchl, Arist. Tierseele, p. 17, 3, τε τὸ   
αἰσθητικὸν V, Alex. variat, l. 1. p. 82, 27 et 86, 20 τι, sed p. 86, 5 τε || 417a, 1. εἴρηται   
V, εἴρηται μὲν Simpl. Philop. ad hunc locum et Alex. ap. Philop., εἴρηται μὲν καὶ S et ad   
417a, 14. Philop., εἰρήκαμεν καὶ T W X, reliqui εἰρήκαμεν, etiam, ut videtur, Soph. 63, 23 ||   
καὶ ἐν STUWX || 2. post πάσχειν Alex. ap. Philop. tradit ferri etiam lectionem :   
λεπτόν δὲ καὶ νῦν, quod additamentum fort. leg. et Them. et Soph., non leg. Simpl.   
Philop. || 3. οὐ post 2. τί S U X || 4. αἰσθήσεις S U X || 7. διὸ om. VW, leg. Philop. καὶ   
417b, 16. || καθάπερ] καὶ καθάπερ U, οὐκ αἰσθάνεται καθάπερ TX, καθάπερ οὐκ αἰσθάνεται   
S || 8. καθ' ἑαυτὸ E Torst., ὑφ' ἑαυτοῦ S Them., ὑφ' αὐτοῦ U V, καθ' αὐτὸ etiam Soph. ||   
9. αὐτὸ U X || 10. τὸ αἰσθανόμενον Soph. || ἀκοῦον καὶ ὁρᾶν omnes codd., etiam E   
(Trend. et, Torstrikio teste, Bek.) || 13. δύναμις et ἐνέργεια P || ὁμοίως... 14. ἐνεργεία, quae

the rudder, being simply moved. Now it is necessary that all food should be capable of digestion, and digestion is promoted by heat; this explains why every animate thing has warmth. This, then, is an outline of what nutriment is. It must be more clearly defined hereafter in the discussion devoted specially to it.

Now that these points have been determined, let us proceed **5**

**Sensation.** to a general discussion of all sensation. As above remarked, sensation consists in being moved and acted upon, for it is held to be a species of qualitative change. Some add that like is in fact acted upon by like. How far this is possible or impossible we have explained in the general discussion of action and passivity. The question arises why there is no **2** sensation of the senses themselves: that is, why they produce no sensation apart from external sensibles, though the senses contain fire, earth and the other elements, which are the objects of sensation either in themselves or through their attributes. Evidently it follows that the faculty of sensible perception exists not in activity, but only in potentiality. Hence it must be **Sensation is (1) potential, (2) actual.** here as with the fuel which does not burn of and in itself without something to make it burn; otherwise it would kindle itself and would have no need of the fire which is actually existent. Now to have sensation has two meanings: we use the terms hearing and seeing of that which has the capacity to hear and see, even though it be at the time asleep, just as we do of that which already actually hears and sees. And therefore sensation, too, will have two meanings: it may mean either potential or actual sensation. Similarly with having sensation, whether potential or actual.

Let us then first proceed on the assumption that to be acted **3**

**Agent and patient.** upon or moved is identical with active operation. For movement is in fact active operation of some sort, though incomplete, as we have elsewhere explained. But in every case things are acted upon and moved by an agent in actual operation. It follows that in one sense what is acted upon is acted upon by what is like it, in another sense by what is unlike it, as we have explained. That is to say, while being acted upon it is unlike, after it has been acted upon it is like the agent.

Trend. suspecta videntur, unc. incluserunt Biehl Rodier, *αισθητόν* pro *αισθάνεσθαι* scripsit Torst. ex Alex. *ἀπ. καὶ λόγ.* 83, 6, probat Brentano, die Psych. des Arist. 141, recepit etiam Rodier, totum hunc locum leg. etiam Them. Philop. vet. transl., defendit Barco, Aristotele, dell' anima vegetativa e sensitiva p. 43 || 15. post *πάσχειν* addendum *τε* censet Susemihl || τοῦ ante *ἐνεργεῖν* om. E V W y Philop. Soph. || 16. *λέγομεν* S T U W X y Simpl. Philop. Soph. || 17. *πάντα...το.* *ἐστίν* secludenda censet Susemihl.

4 διαιρετέον δὲ καὶ περὶ δυνάμεως καὶ ἐντελεχείας· νῦν γὰρ ἀπλῶς λέγομεν περὶ αὐτῶν. ἔστι μὲν γὰρ οὕτως ἐπιστήμὸν τι ὡς ἂν εἴποιμεν ἄνθρωπον ἐπιστήμονα, ὅτι ὁ ἄνθρωπος τῶν ἐπιστημόνων καὶ ἔχοντων ἐπιστήμην· ἔστι δ' ὡς ἤδη λέγομεν ἐπιστήμονα τὸν ἔχοντα τὴν γραμματικὴν· 25 ἐκάτερος δὲ τούτων οὐ τὸν αὐτὸν τρόπον δυνατὸς ἐστίν, ἀλλ' ὁ μὲν ὅτι τὸ γένος τοιοῦτον καὶ ἡ ὕλη, ὁ δ' ὅτι βουλευθεὶς δυνατὸς θεωρεῖν, ἂν μὴ τι κωλύσῃ τῶν ἑξῶθεν· ὁ δ' ἤδη θεωρῶν, ἐντελεχεία ὣν καὶ κυρίως ἐπιστάμενος τόδε τὸ Α. ἀμφοτέροι μὲν οὖν οἱ πρῶτοι κατὰ δύναναι ἐπιστήμονες, 30 ἀλλ' ὁ μὲν διὰ μαθήσεως ἀλλοιωθεὶς καὶ πολλάκις ἐξ ἐναντίας μεταβαλὼν ἕξεως, ὁ δὲ ἐκ τοῦ ἔχειν τὴν αἴσθησιν ἢ τὴν γραμματικὴν, μὴ ἐνεργεῖν δ' εἰς τὸ ἐνεργεῖν ἄλλον 417b

5 τρόπον. οὐκ ἔστι δ' ἀπλοῦν οὐδὲ τὸ πάσχειν, ἀλλὰ τὸ μὲν φθορά τις ὑπὸ τοῦ ἐναντίου, τὸ δὲ σωτηρία μᾶλλον τοῦ δυνάμει ὄντος ὑπὸ τοῦ ἐντελεχείᾳ ὄντος καὶ ὁμοίου οὕτως ὡς δύναμις ἔχει πρὸς ἐντελέχειαν· θεωροῦν γὰρ γίνεταί τὸ ἔχον 5 τὴν ἐπιστήμην, ὅπερ ἢ οὐκ ἔστιν ἀλλοιούσθαι (εἰς αὐτὸ γὰρ ἢ ἐπίδοσις καὶ εἰς ἐντελέχειαν) ἢ ἕτερον γένος ἀλλοιώσεως. διὸ οὐ καλῶς ἔχει λέγειν τὸ φρονεῖν, ὅταν φρονῇ, ἀλλοιούσθαι, ὥσπερ οὐδὲ τὸν οἰκοδόμον ὅταν οἰκοδομῇ. τὸ μὲν οὖν εἰς ἐντελέχειαν ἄγον ἐκ δυνάμει ὄντος κατὰ τὸ νοεῖν καὶ 10 φρονεῖν οὐ διδασκαλίαν ἀλλ' ἐτέραν ἐπωνυμίαν ἔχειν δίκαιον· τὸ δ' ἐκ δυνάμει ὄντος μαυθάνον καὶ λαμβάνον ἐπιστήμην ὑπὸ τοῦ ἐντελεχείᾳ ὄντος καὶ διδασκαλικοῦ ἥτοι οὐδὲ

21. νῦν μὲν γὰρ TW, μὲν om. Soph., οὐ γὰρ ἀπλῶς conl. Roeper in Philol. VII, p. 238 || 22. ἐλέγομεν conl. Torst., λέγομεν etiam Philop. Soph. || 23. εἴπωμεν ETUVWY, εἴποιμεν etiam Soph. || 24. καὶ τῶν ἐχ. SUX || 25. ἤδη hoc loco positum suspectum videtur Torst., defendit Vahlen, Arist. Aufsätze II, p. 26 || 26. ἐκάτερος...28. ἕξεωθεν in parenth. Torst., quod vituperat Vahlen l. l. || 27. om. ἡ Simpl. 121, 19, leg. etiam Philop. Soph. || 28. κωλύη Simpl., κωλύση etiam Philop. || τρίτος δ' ὁ ἤδη e Soph. scripsit Torst., τρίτος δ' habet etiam Them., sed haud dubie per interpretamentum, vulgatam defendit Vahlen l. l. || 29. post θεωρῶν virgulam Torst. || ἄλφα literis scriptum E (Trend.) || 30. πρῶτοι unc. incl. Torst., tuentur Simpl. Soph. et sine dubio Them. 55, 24 || Torst. conl. ἀμφοτέροι μὲν οὖν οἱ κατὰ δύναναι ἐπιστήμονες ἐνεργεῖα γίνονται ἐπιστήμονες, ἀλλ', tuetur vulgatam etiam Soph. || 32. pro αἴσθησιν conl. Torst. ἀριθμητικὴν, quod re vera habet Them., αἴσθησιν leg. Philop. Simpl. Soph. || 417 b, 4. virgulam post ὁμοίου (Bek. Trend.) deleuit Torst. || 5. γὰρ tuentur praeter omnes codd. Them. Simpl. Philop. Alex. ἀπ. καὶ λύσ. 80, 4. 81, 11. 84, 7 || 6. τὴν om. SX Alex. 80, 4, leg. Them. Philop. Alex. 81, 11. 84, 7 || αὐτὸ X Soph., αὐτὸ Trend., probat Beare, Greek Theories, p. 234, adn. 2, αὐτὸ leg.

We must also draw a distinction in regard to the terms 4  
 potentiality and actuality: at present we are using them without  
 qualification. For instance, we may use the term wise,  
 firstly, in the sense in which we might speak of man  
 as wise, because man is one of the genus of beings  
 which are wise and have wisdom; secondly, in the sense in  
 which we at once call the man wise who has learnt, say,  
 grammar. Now of these two men each possesses the capacity, but  
 in a different sense: the one because the genus to which he  
 belongs, that is to say, his matter, is potentially wise; the other  
 because he is capable, if he chose, of applying the wisdom he has  
 acquired, provided there is nothing external to hinder. Whereas  
 he who is at the moment exercising his wisdom is in actuality and  
 is wise in the proper sense of the term: for example, he knows the  
 A before him. Thus the first two are both potentially wise: the  
 first becomes wise actually after he has undergone qualitative  
 change through instruction and often after transition from the  
 reverse condition; while in the latter case it is by another kind  
 of transition that the man passes from the mere possession, with-  
 out the use, of sensation or grammar to the use of it.

To suffer or be acted upon, too, is a term of more than one 5  
 meaning. Sometimes it means a sort of destruction by the  
 contrary, sometimes it is rather a preservation of what  
 is potentially existent by what is actually existent and  
 like it, so far as likeness holds of potentiality when  
 compared with actuality. For it is by exercise of knowledge that  
 the possessor of knowledge becomes such in actuality: and this  
 either is no qualitative change (for the thing develops into its own  
 nature and actuality), or else is qualitative change of a different sort.  
 Hence it is not right to say that that which thinks undergoes  
 change when it thinks, any more than that the builder undergoes  
 change when he builds. That, then, which works the change from  
 potential existence to actuality in a thinking and intelligent being  
 should properly receive a different name and not be called in-  
 struction: while that which learns and is brought from potential to  
 actual knowledge by that which is in actuality and capable of  
 instructing should either not be said to suffer or be acted upon at

Simpl. Philop. Them. 55, 38. 28, 30. Alex. 81, 12. 84, 10 || 9. τὸ μὲν... 11. δίκαιον suspecta  
 videtur Hayduckio, progr. Meldorf 1877, p. 11 || 10. Torst., cui assentitur Susemihl,  
 coni. ἄγειν, leg. ἄγον Alex. 81, 15 et, ut videtur, Philop. 304, 6. 306, 2 || κατὰ unc.  
 incl. Torst., leg. Alex. 81, 15 || 12. ἐκ δυνάμει ὄντος unc. incl. Torst., tuentur Philop.  
 Soph. Them. 28, 29 sq. || 13. Hayduck l. l. legendum esse censet: οὐδὲ τοῦτο πάσχειν.

πάσχειν φατέον, [ὥσπερ εἴρηται,] ἡ δύο τρόπους εἶναι ἀλλοιώσεως, τὴν τε ἐπὶ τὰς στερητικὰς διαθέσεις μεταβολὴν 15  
6 καὶ τὴν ἐπὶ τὰς ἑξείς καὶ τὴν φύσιν. τοῦ δ' αἰσθητικοῦ ἡ μὲν πρώτη μεταβολὴ γίνεται ὑπὸ τοῦ γεννῶντος, ὅταν δὲ γεννηθῇ, ἔχει ἤδη ὥσπερ ἐπιστήμην καὶ τὸ αἰσθάνεσθαι. καὶ τὸ κατ' ἐνέργειαν δὲ ὁμοίως λέγεται τῷ θεωρεῖν· διαφέρει δέ, ὅτι τοῦ μὲν τὰ ποιητικὰ τῆς ἐνεργείας ἔξωθεν, τὸ ὁρατὸν 20 καὶ τὸ ἀκουστόν, ὁμοίως δὲ καὶ τὰ λοιπὰ τῶν αἰσθητῶν. αἴτιον δ' ὅτι τῶν καθ' ἕκαστον ἡ κατ' ἐνέργειαν αἴσθησις, ἡ δ' ἐπιστήμη τῶν καθόλου· ταῦτα δ' ἐν αὐτῇ πῶς ἐστὶ τῇ ψυχῇ. διὸ νοῆσαι μὲν ἐπ' αὐτῷ, ὁπόταν βούληται, αἰσθάνεσθαι δ' οὐκ ἐπ' αὐτῷ· ἀναγκαῖον γὰρ ὑπάρχειν τὸ αἰσθη- 25 τόν. ὁμοίως δὲ τοῦτ' ἔχει καὶ ταῖς ἐπιστήμαις ταῖς τῶν αἰσθητῶν, καὶ διὰ τὴν αὐτὴν αἰτίαν, ὅτι τὰ αἰσθητὰ τῶν καθ' ἕκαστα καὶ τῶν ἔξωθεν. ἀλλὰ περὶ μὲν τούτων διασα- 7 φῆσαι καιρὸς γένοιτ' ἂν καὶ εἰσαυθίς. νῦν δὲ διωρίσθω τοσοῦτον, ὅτι οὐχ ἄπλοῦ ὄντος τοῦ δυνάμει λεγομένου, 30 ἀλλὰ τοῦ μὲν ὥσπερ ἂν εἴποιμεν τὸν παῖδα δύνασθαι στρατηγεῖν, τοῦ δὲ ὡς τὸν ἐν ἡλικίᾳ ὄντα, οὕτως ἔχει τὸ αἰσθητικόν. ἐπεὶ δ' ἀνώνυμος αὐτῶν ἡ διαφορὰ, διωρίσται 418a δὲ περὶ αὐτῶν ὅτι ἕτερα καὶ πῶς ἕτερα, χρῆσθαι ἀναγκαῖον τῷ πάσχειν καὶ ἀλλοιοῦσθαι ὡς κυρίοις ὀνόμασιν. τὸ δ' αἰσθη- τικὸν δυνάμει ἐστὶν οἷον τὸ αἰσθητὸν ἤδη ἐντελεχεία, καθά- περ εἴρηται. πάσχει μὲν οὖν οὐχ ὅμοιον ὄν, πεπονθὸς δ' 5 ὁμοίωται καὶ ἔστιν οἷον ἐκείνο.

6 Λεκτέον δὲ καθ' ἑκάστην αἴσθησιν περὶ τῶν αἰσθητῶν πρῶτον. λέγεται δὲ τὸ αἰσθητὸν τριχῶς, ὣν δύο μὲν καθ' αὐτὰ φαμεν αἰσθάνεσθαι, τὸ δὲ ἐν κατὰ συμβεβηκός. τῶν δὲ δύο τὸ μὲν ἰδίον ἐστὶν ἐκάστης αἰσθήσεως, τὸ δὲ κοινὸν 10 2 πασῶν. λέγω δ' ἰδίον μὲν ὃ μὴ ἐνδέχεται ἑτέρᾳ αἰσθήσει αἰσθάνεσθαι, καὶ περὶ ὃ μὴ ἐνδέχεται ἀπατηθῆναι (οἷον

14. ὥσπερ εἴρηται praeunte Hayduckio unc. incl. Biehl, om. SUX Alex. 84, 26 Them. Philop., leg. quidem Soph., fort. post ἡ transponenda censet Sussemlil || 18. καὶ post αἰσθ. om. EU, καὶ τὸ om. V, leg. καὶ τὸ Simpl. Philop. Alex. 85, 3 || 19. δὲ om. SV, post ὁμοίως ponit E, κατ' ἐνέργειαν δὲ leg. etiam Philop. Alex. 85, 4 || 24. ὅταν VWX Soph. || 31. εἴποιμεν SUX, εἴποιμεν etiam Soph. || 418 a, 2. τὸ T et E (Trend.) || 3. δ' om. ES, τὸ δὲ Soph. || 4. καθάπερ εἴρηται ante 6. ἐστὶν transponenda censet Essen || 8. δυὸν SUX || 11. pro πασῶν et 19. πάσαις Schieboldt, De imag. p. 15, conii. πλείονων et πλείουσιν || 12. οἷον...14. διαφορὰς in parenth. posui.



all, or else two modes of change should be assumed, one to the negative states and the other to the normal habits and the true nature.

In the sensitive subject the first change is due to the 6 parent: once generated it possesses sensation exactly in the same sense as we possess knowledge. And to have actual sensation corresponds to exercise of knowledge. There is this difference, however, that in the one case the causes of the activity are external: as, for instance, the objects of sight, hearing and the other senses. The reason is that actual sensation is always of particulars, while knowledge is of universals: and these universals are, in a manner, in the soul itself. Hence it is in our power to think whenever we please, but sensation is not in our power: for the presence of the sensible object is necessary. It is much the same with the sciences which deal with sensible objects; and for the same reason, namely, that sensibles are particulars and are external.

But we shall have a further opportunity of making this clear hereafter. For the present let us be content to have established 7 that of the two meanings of potentiality, the one according to which a child might be called potentially a general, and the other according to which a man of full age might be so called, it is the latter which applies to the faculty of sense-perception. But as this distinction has no word to mark it, although the fact and the nature of the distinction have been established, we are compelled to use the terms to suffer or be acted upon and to be qualitatively changed as if they were the proper terms. Now, as has been explained, the sensitive faculty is potentially such as the sensible object is in actuality. While it is being acted upon, it is not yet similar, but, when once it has been acted upon, it is assimilated and has the same character as the sensible object.

In considering each separate sense we must first treat of their 6 objects. By the sensible object may be meant any one of three things, two of which we say are perceived in themselves or directly, while the third is perceived *per accidens* or indirectly. Of the first two the one is the special object of a particular sense, the other an object common to all the senses. By a special object of 2 a particular sense I mean that which cannot be perceived by any other sense and in respect to which deception is impossible; for

Actual  
sensation  
condi-  
tioned by  
the ex-  
ternal  
sensible.

Assimila-  
tion of  
faculty to  
object in  
actual  
sensation.

The sensi-  
ble object:  
attributes  
perceived  
directly  
(1) by the  
several  
senses;

ὄψις χρώματος καὶ ἀκοὴ ψόφου καὶ γεῦσις χυμοῦ, ἣ  
 δ' ἀφ' ἧς πλείους μὲν ἔχει διαφοράς), ἀλλ' ἐκάστη γε κρίνει  
 περὶ τούτων, καὶ οὐκ ἀπατᾶται ὅτι χρῶμα οὐδ' ὅτι ψόφος, 15  
 3 ἀλλὰ τί τὸ κεχρωσμένον ἢ ποῦ, ἢ τί τὸ ψοφούν ἢ ποῦ. τὰ  
 μὲν οὖν τοιαῦτα λέγεται ἴδια ἐκάστου, κοινὰ δὲ κίνησις, ἡρε-  
 μία, ἀριθμός, σχῆμα, μέγεθος· τὰ γὰρ τοιαῦτα οὐδεμιᾶς  
 ἐστὶν ἴδια, ἀλλὰ κοινὰ πάσαις. καὶ γὰρ ἀφ' ἧς κίνησις τίς  
 4 ἐστὶν αἰσθητὴ καὶ ὄψει. κατὰ συμβεβηκὸς δὲ λέγεται αἰ- 20  
 σθητόν, οἷον εἰς τὸ λευκὸν εἶη Διάρους υἱός· κατὰ συμβε-  
 βηκὸς γὰρ τούτου αἰσθάνεται, ὅτι τῷ λευκῷ συμβέβηκε  
 τοῦτο οὐ αἰσθάνεται. διὸ καὶ οὐδὲν πάσχει ἢ τοιοῦτον ὑπὸ τοῦ  
 αἰσθητοῦ. τῶν δὲ καθ' αὐτὰ αἰσθητῶν τὰ ἴδια κυρίως ἐστὶν  
 αἰσθητά, καὶ πρὸς ἃ ἡ οὐσία πέφυκεν ἐκάστης αἰσθήσεως. 25  
 7 Οὐ μὲν οὖν ἐστὶν ἡ ὄψις, τοῦτ' ἐστὶν ὁρατόν. ὁρατὸν δ'  
 ἐστὶ χρῶμα μὲν, καὶ ὁ λόγῳ μὲν ἔστιν εἰπεῖν, ἀνώνυμον δὲ  
 τυγχάνει ὄν· δηλὸν δὲ ἔσται ὁ λέγομεν προελθοῦσι μά-  
 λιστα. τὸ γὰρ ὁρατόν ἐστὶ χρῶμα. τοῦτο δ' ἐστὶ τὸ ἐπὶ τοῦ  
 καθ' αὐτὸ ὁρατοῦ· καθ' αὐτὸ δὲ οὐ τῷ λόγῳ, ἀλλ' ὅτι ἐν 30  
 ἑαυτῷ ἔχει τὸ αἷτιον τοῦ εἶναι ὁρατόν. πᾶν δὲ χρῶμα κινη-  
 τικόν ἐστι τοῦ κατ' ἐνέργειαν διαφανοῦς, καὶ τοῦτ' ἐστὶν αὐτοῦ ἡ 418b  
 φύσις. διόπερ οὐχ ὁρατὸν ἄνευ φωτός, ἀλλὰ πᾶν τὸ ἐκάστου  
 χρῶμα ἐν φωτὶ ὁράται. διὸ περὶ φωτὸς πρῶτον λεκτέον τί  
 2 ἐστὶν. ἔστι δὴ τι διαφανές. διαφανές δὲ λέγω ὃ ἐστὶ μὲν  
 ὁρατόν, οὐ καθ' αὐτὸ δὲ ὁρατὸν ὡς ἀπλῶς εἰπεῖν, ἀλλὰ δι' 5  
 ἀλλότριον χρῶμα. τοιοῦτον δὲ ἐστὶν ἀήρ καὶ ὕδωρ καὶ πολλὰ  
 τῶν στερεῶν· οὐ γὰρ ἢ ὕδωρ οὐδ' ἢ ἀήρ, διαφανές, ἀλλ' ὅτι

13. post χυμοῦ vulg. punct. || 13. ἡ...14. διαφοράς in parenth. ponenda censet Susemihl ||  
 14. post διαφοράς vulg. colon, post διαφοράς signum orationis imperfectae ponit Torst., cui  
 adversatur Barco || ante ἐκάστη addendum ὡς censet Essen || ἐκαστον P || 17. ἐκάστης  
 W Soph. 70, 33, de Them. 57, 36 non liquet, ἐκάστη X, vulgatam defendit Barco ||  
 19. πάσαις om. U X et pr. S, πάντων rc. S, πασῶν videtur legisse Philop. 315, 10 || γὰρ  
 ἢ ἀφ' ἧς E (Bhl.) || 20. ὄψει] γεύσει coni. Steinhart || post ὄψει editi ante Bekkerum omnes,  
 ut videtur: καθ' αὐτὰ μὲν οὖν ἐστὶν αἰσθητὰ ταῦτα, quae legit etiam Soph. || 21. διάρρους  
 υἱὸς ET Soph. v. l. (Διάρους υἱὸς e codd. Hayduck 71, 4), διάρρου υἱὸς V, υἱὸς om. W,  
 Διάρους υἱὸς Simpl., et Διάρους υἱὸς et Διάρης Them., Διάρης Philop., qui in nonnullis  
 ἀντιγράφοις etiam scripturam esse Διάρους υἱὸς commemorat || 23. οὐ αἰσθάνεται ante  
 22. συμβέβηκε transponenda censet Essen || καὶ om. S U V || ἢ om. S U X, tuentur et καὶ  
 et ἢ Them. Soph. || 26. ἡ om. S U || 27. μὲν post χρῶμα EW Biehl Rodier, τε reliqui  
 omnes, etiam Philop. Simpl. || 28. προελθοῦσι· μάλιστα γὰρ coni. Essen II, 42 ||  
 μάλιστα om. S U X, leg. Soph. || 29. τοῦτο...31. ὁρατόν unc. includenda censet Susemihl ||  
 29, 30. τῶν καθ' αὐτὸ ὁρατῶν T W et E<sub>1</sub> (Bus.), τοῦ...ὁρατοῦ etiam Simpl. Philop. Soph. ||

example, sight is of colour, hearing of sound and taste of flavour, while touch no doubt has for its object several varieties. But at any rate each single sense judges of its proper objects and is not deceived as to the fact that there is a colour or a sound ; though as to what or where the coloured object is or what or where the object is which produces the sound, mistake is possible. Such then, are the 3 special objects of the several senses. By common sensibles are

or (2) by  
the senses  
in com-  
mon.

meant motion, rest, number, figure, size : for such qualities are not the special objects of any single sense, but are common to all. For example, a particular motion

can be perceived by touch as well as by sight. What is meant 4

The things  
which have  
the attri-  
butes are  
indirectly  
perceived.

by the indirect object of sense may be illustrated if we

suppose that the white thing before you is Diares' son.

You perceive Diares' son, but indirectly, for that which

you perceive is accessory to the whiteness. Hence you

are not affected by the indirect sensible as such. Of the

two classes of sensibles directly perceived it is the objects special to the different senses which are properly perceptible : and it is to these that the essential character of each sense is naturally adapted.

The object, then, of sight is the visible : what is visible is colour 7

Sight and  
colour.

and something besides which can be described, though

it has no name. What we mean will best be made clear

as we proceed. The visible, then, is colour. Now colour is that with which what is visible in itself is overlaid : and, when I say in itself, I do not mean what is visible by its essence or form, but what is visible because it contains within itself the cause of visibility, namely, colour. But colour is universally capable of exciting change in the actually transparent, that is, in light ; this being, in fact, the true nature of colour. Hence colour is not visible without light, but the colour of each object is always seen in light. And so we shall have first to explain what light is.

There is, then, we assume, something transparent ; and by this 2

The  
medium.

I mean that which, though visible, is not properly

speaking, visible in itself, but by reason of extrinsic

colour. Air, water and many solid bodies answer to this description. For they are not transparent *quā* air or *quā* water,

31. αὐτῷ X, αὐτῷ U V, εἰ αὐτῷ videntur legisse Them. 58, 31 Philop. 320, 18 || post χρώμα add. ἐν ἄλλῃ ἔχει et κινητικόν...b, 1. διαφανούς unc. incl. Essen || 418 b, 2. πάντως ἕκαστον S U X Them. et fort. Simpl., πᾶν τὸ ἐκάστου etiam Soph. || 3. ὁρᾶται E T y Soph. Torst., reliqui ante Torst. omnes ὁρατόν || 6. χρώμα deleri vult Siebeck, Philolog. XL, p. 347, probat Susemihl, χρ. leg. etiam Theoph. ap. Prisc. 7, 28 || 7. post στερεῶν add. οἶον ὕλος κρύσταλλος T et margo U, similia in paraphr. Them. Philop. Soph.

ἐστὶ φύσις ὑπάρχουσα ἢ αὐτὴ ἐν τούτοις ἀμφοτέροις καὶ ἐν τῷ αἰδίῳ τῷ ἄνω σώματι. φῶς δὲ ἐστὶν ἡ τούτου ἐνέργεια, τοῦ διαφανοῦς ἢ διαφανές. δυνάμει δὲ ἐν ᾧ τοῦτ' ἐστὶ καὶ τὸ 10 σκότος. τὸ δὲ φῶς οἷον χρώμα ἐστὶ τοῦ διαφανοῦς, ὅταν ἢ ἐντελεχεία διαφανές ὑπὸ πυρὸς ἢ τοιούτου οἷον τὸ ἄνω σῶμα· καὶ γὰρ τούτῳ τι ὑπάρχει ἐν καὶ ταυτόν. τί μὲν οὖν τὸ διαφανές καὶ τί τὸ φῶς, εἴρηται, ὅτι οὔτε πῦρ οὔθ' ὅλως σῶμα οὐδ' ἀπορροή σώματος οὐδενός (εἴη γὰρ ἂν σῶμά τι καὶ 15 οὕτως), ἀλλὰ πυρὸς ἢ τοιούτου τινὸς παρουσία ἐν τῷ διαφανεῖ· οὐδὲ γὰρ δύο σώματα ἅμα δυνατὸν ἐν τῷ αὐτῷ εἶναι.

3 δοκεῖ τε τὸ φῶς ἐναντίον εἶναι τῷ σκότει· ἔστι δὲ τὸ σκότος στέρησις τῆς τοιαύτης ἕξεως ἐκ διαφανοῦς, ὥστε δῆλον ὅτι καὶ ἡ τούτου παρουσία τὸ φῶς ἐστίν. καὶ οὐκ ὀρθῶς Ἐμπέ- 20 δοκλῆς, οὐδ' εἴ τις ἄλλος οὕτως εἴρηκεν, ὥς φερομένου τοῦ φωτὸς καὶ γιγνομένου ποτὲ μεταξὺ τῆς γῆς καὶ τοῦ περιέχοντος, ἡμᾶς δὲ λανθάνοντος· τοῦτο γὰρ ἐστὶ καὶ παρὰ τὴν τοῦ λόγου ἐνάργειαν καὶ παρὰ τὰ φαινόμενα· ἐν μικρῷ μὲν γὰρ διαστήματι λάθοι ἄν, ἀπ' ἀνατολῆς δ' ἐπὶ 25 4 δυσμὰς τὸ λανθάνειν μέγα λίαν τὸ αἴτημα. ἔστι δὲ χρώματος μὲν δεκτικὸν τὸ ἄχρουν, ψόφου δὲ τὸ ἄψοφον. ἄχρουν δ' ἐστὶ τὸ διαφανές καὶ τὸ ἀόρατον ἢ τὸ μόλις ὁρώμενον, οἷον δοκεῖ τὸ σκοτεινόν. τοιούτον δὲ τὸ διαφανές μὲν, ἀλλ' οὐχ ὅταν ἢ ἐντελεχεία διαφανές, ἀλλ' ὅταν δυ- 30 νάμει· ἢ γὰρ αὐτὴ φύσις ὅτε μὲν σκότος ὅτε δὲ φῶς ἐστίν. οὐ πάντα δὲ ὁρατὰ ἐν φωτὶ ἐστίν, ἀλλὰ μόνον ἐκάστου 419a τὸ οἰκείον χρώμα· ἕνια γὰρ ἐν μὲν τῷ φωτὶ οὐχ ὁράται, ἐν δὲ τῷ σκότει ποιεῖ αἴσθησιν, οἷον τὰ πυρώδη φαινόμενα καὶ λάμποντα (ἀνώνυμα δ' ἐστὶ ταῦτα ἐνὶ ὀνόματι), οἷον

8. ἐστὶ τις φύσις U X Them. Simpl. Soph. Torst., om. τις reliqui || ἐνυπάρχουσα S U V X Them. Bek. Trend. || καί...9. σώματι unc. includenda censet Susemihl || 9. virgulam post ἐνέργ. om. Bek. Trend., ἐνέργεια καὶ τοῦ διαφανοῦς coni. Trend. || 10. virgulam post ἐστὶ Bek., post δὲ Torst., δυνάμει δὲ καὶ ἐν ᾧ τοῦτ' ἐστὶ, τὸ σκότος coni. Steinhart || 11. ἢ om. E || 12. ἢ...13. ταυτόν unc. includenda censet Susemihl et Essen II, 43 || 14. εἴρηται καὶ τί τὸ φῶς V, similiter in paraphr. Them. || 15. post σῶμα transferenda esse, quae nunc 17. leguntur, ita: σῶμα (οὐδὲ γὰρ...εἶναι), οὐδ' ἀπορροή censet Torst., eundem, quem vulgata, ordinem servant Them. Simpl. Philop. || οὔτε T V W, οὐδὲ etiam Them. || 16. ἢ τοιούτου τινὸς unc. includenda censet Susemihl || 18. τε] δὲ T U V X Bek. Trend. || σκότω ES || δ T U, om. V || 20. τὸ φῶς ἢ τούτου παρουσία S U X, vulgatam tuetur Them. || 22. πεινομένου EV et vet. transl. Stapfer, Krit. Stud. p. 16 Biehl Rodier, vulgo γιγνομένου, etiam Them. 60, 28 Diels, Fragmente der Vorsokr. p. 170, 38 || ποτὲ] πρότερον eis τὸ

but because there is a certain natural attribute present in both of them which is present also in the eternal body on high. Light is the actuality of this transparent *quâd* transparent. But where the transparent is only potentially present, there darkness is actually. Light is a sort of colour in the transparent when made transparent in actuality by the agency of fire or something resembling the celestial body: for this body also has an attribute which is one and the same with that of fire. What the transparent is, and what light is, has now been stated; namely, that it is neither fire nor body generally nor an effluence from any body (for even then it would still be a sort of body), but the presence of fire or something fiery in the transparent. For it is impossible for two bodies to occupy the same space at the same time.

Light is held to be contrary to darkness. But darkness<sup>3</sup> is absence from the transparent of the quality above described: so that plainly light is the presence of it. Thus Empedocles and others who propounded the same view are wrong when they represent light as moving in space and arriving at a given point of time between the earth and that which surrounds it without our perceiving its motion. For this contradicts not only the clear evidence of reason, but also the facts of observation: since, though a movement of light might elude observation within a short distance, that it should do so all the way from east to west is too much to assume.

It is that which is colourless which is receptive of colour, as<sup>4</sup> it is that which is soundless which is receptive of sound. And the transparent is colourless, and so is the invisible or the dimly visible which is our idea of the dark. Such is the transparent medium, not indeed when it is in actuality, but when potentially transparent. For it is the same natural attribute which is at one time darkness and at another time light. It is not everything visible which is visible in light, but only the proper colour of each thing. Some things, indeed, are not seen in daylight, though they produce sensation in the dark: as, for example, the things of fiery and glittering appearance, for which there is no one distinguishing name, like fungus, horn,

conī. Essen, coll. De Sensu 6, 446 b, 29, 30 || τῆς γῆς...23. περιέχοντος unc. incl. Essen || 24. τὴν ἐν τῷ λόγῳ SUX Them. Bek. Trend. τὴν τοῦ λόγου etiam Soph. || ἐνάργειαν TWy Soph. 75, 27 Torst., ἐνέργειαν E (Trend.), ἀλήθειαν reliqui ante Torst. omnes, etiam Them. || ἐν μικρῷ...26. αἶτημα unc. incl. Essen || 419 a, 3. σκότῳ E, σκότῳ Them., σκότει Soph.

μύκης, κέρας, κεφαλαὶ ἰχθύων καὶ λεπίδες καὶ ὀφθαλ- 5  
 μοί· ἀλλ' οὐδενὸς ὁράται τούτων τὸ οἰκείον χρώμα. δι' ἣν  
 5 μὲν οὖν αἰτίαν ταῦτα ὁράται, ἄλλος λόγος· νῦν δ' ἐπὶ το-  
 σοῦτον φανερόν ἐστιν, ὅτι τὸ μὲν ἐν φωτὶ ὁρώμενον χρώμα.  
 διὸ καὶ οὐχ ὁράται ἄνευ φωτός· τοῦτο γὰρ ἦν αὐτῷ τὸ  
 χρώματι εἶναι, τὸ κινητικῷ εἶναι τοῦ κατ' ἐνέργειαν διαφα- 10  
 νοῦς· ἢ δ' ἐντελέχεια τοῦ διαφανοῦς φῶς ἐστίν. σημείον δὲ τού-  
 του φανερόν· ἐὰν γάρ τις θῇ τὸ ἔχον χρώμα ἐπ' αὐτὴν  
 τὴν ὄψιν, οὐκ ὀψεται· ἀλλὰ τὸ μὲν χρώμα κινεῖ τὸ δια-  
 φανές, οἷον τὸν ἀέρα, ὑπὸ τούτου δὲ συνεχοῦς ὄντος κινεῖται  
 6 τὸ αἰσθητήριον. οὐ γὰρ καλῶς τοῦτο λέγει Δημόκριτος οἰό- 15  
 μενος, εἰ γένοιτο κενὸν τὸ μεταξύ, ὁρᾶσθαι ἂν ἀκριβῶς, καὶ  
 εἰ μύρμηξ ἐν τῷ οὐρανῷ εἴη· τοῦτο γὰρ ἀδύνατόν ἐστιν. πά-  
 σχοντος γάρ τι τοῦ αἰσθητικοῦ γίνεται τὸ ὁρᾶν· ὑπ' αὐτοῦ  
 μὲν οὖν τοῦ ὁρωμένου χρώματος ἀδύνατον· λείπεται δὴ ὑπὸ  
 τοῦ μεταξύ, ὥστ' ἀναγκαῖόν τι εἶναι μεταξύ· κενοῦ δὲ γενο- 20  
 μένου οὐχ ὅτι ἀκριβῶς, ἀλλ' ὅλως οὐθὲν ὀφθήσεται.  
 7 δι' ἣν μὲν οὖν αἰτίαν τὸ χρώμα ἀναγκαῖον ἐν φωτὶ ὁρᾶσθαι,  
 εἴρηται. πῦρ δὲ ἐν ἀμφοῖν ὁράται, καὶ ἐν σκότει καὶ ἐν φωτὶ,  
 καὶ τοῦτο ἐξ ἀνάγκης· τὸ γὰρ διαφανές ὑπὸ τούτου γίνεται  
 8 διαφανές. ὁ δ' αὐτὸς λόγος καὶ περὶ ψόφου καὶ ὁσμῆς 25  
 ἐστίν· οὐθὲν γὰρ αὐτῶν ἀπτόμενον τοῦ αἰσθητηρίου ποιεῖ τὴν  
 αἴσθησιν, ἀλλ' ὑπὸ μὲν ὁσμῆς καὶ ψόφου τὸ μεταξύ κι-  
 νεῖται, ὑπὸ δὲ τούτου τῶν αἰσθητηρίων ἐκότερον· ὅταν δ' ἐπ'  
 αὐτό τις ἐπιθῇ τὸ αἰσθητήριον τὸ ψοφοῦν ἢ τὸ ὄξον, οὐδεμίαν  
 αἴσθησιν ποιήσει. περὶ δὲ ἀφῆς καὶ γεύσεως ἔχει μὲν 30  
 ὁμοίως, οὐ φαίνεται δέ· δι' ἣν δ' αἰτίαν, ὕστερον ἔσται δῆλον.  
 9 τὸ δὲ μεταξύ ψόφων μὲν ἀήρ, ὁσμῆς δ' ἀνώνυμον· κοινὸν  
 γὰρ δὴ τι πάθος ἐπ' αἵρος καὶ ὕδατός ἐστιν, ὥσπερ τὸ δια-  
 φανές χρώματι, οὕτω τῷ ἔχοντι ὁσμὴν ὃ ἐν ἀμφοτέροις

5. κέρας] κρέας conl. Chandler, Sugg. and emend., p. 7 || λοιπίδες E<sub>1</sub>, λεπίδες etiam Them. Philop. Soph. || 7. ὁρατά E, ὁράται etiam Them. Philop. Soph. || 9. καὶ om. E U W Soph. || αὐτὸ W Trendl., αὐτῷ etiam Them. Soph., tuentur Prantl, Arist. iib. d. Farben, p. 93, adn. 2, Barco p. 57, αὐτὸ ἦν pro ἦν αὐτῷ conl. Essen II, p. 45 || τὸ] τῷ W, om. S Them. || 10. post χρ. εἶναι virgulam om. Bek. Trendl. || 14. δὴ E T W y, δὲ ἥδη Them., δὲ etiam Simpl. Soph. || 16. virg. post ἀκριβῶς posuit Diels || 16. et 17. καὶ εἰ] καὶ εἰ etiam Soph. 83, 32, καὶ εἰ Philop. 350, 8 || 17. ἐστὶν ἀδύνατον S U X, ἀδύνατόν ἐστιν Soph. || 18. αἰσθητηρίου V W et, ut videtur, Philop. 350, 13, αἰσθητικοῦ etiam Soph., αἰσθήσεως in paraphr. Them. 62, 14 || 19. δὴ E T W, δὲ reliqui ante Biehlium

the heads, scales and eyes of fishes. But in no one of these cases is the proper colour seen. Why these objects are seen must be discussed elsewhere. At present this much is clear, that the 5 object seen in light is colour, and this is why it is not seen without light. For the very quiddity of colour is, as we saw, just this, that it is capable of exciting change in the operantly transparent medium: and the activity of the transparent is light. There is clear evidence of this. If you lay the coloured object upon your eye, you will not see it. On the contrary, what the colour excites is the transparent medium, say, the air, and by this, which is continuous, the sense-organ is stimulated. For it was a mistake in Democritus 6 to suppose that if the intervening space became a void, even an ant would be distinctly seen, supposing there were one in the sky. That is impossible. For sight takes place through an affection of the sensitive faculty. Now it cannot be affected by that which is seen, the colour itself: therefore it can only be by the intervening medium: hence the existence of some medium is necessary. But, if the intermediate space became a void, so far from being seen distinctly, an object would not be visible at all.

We have explained the reason why colour must be seen in 7 light. Fire is visible both in light and in darkness: and necessarily so, for it is owing to fire that the transparent becomes transparent. The same argument holds for sound and odour. For no sound 8 or scent produces sensation by contact with the sense-organ: it is the intervening medium which is excited by sound and odour and the respective sense-organs by the medium. But, when the body which emits the sound or odour is placed on the sense-organ itself, it will not produce any sensation. The same holds of touch and taste, although it appears to be otherwise. The reason for this will be seen hereafter. The medium for sounds is air, that for odour 9 has no name. For there is assuredly a common quality in air and water, and this quality, which is present in both, stands to the body which emits odour in the same relation as the transparent

omnes, etiam Them. Simpl. Soph. || 20 ὡστ'...μεταξὺ om. S U X, leg. Soph. (cf. Prisc. L. 10, 10) || 22. δι' ἣν...25. διαφανές unc. incl. Susemihl et Essen || 23. σκοτῶι E, σκοτῶ Soph. || 29. τις ἐπιθῆ om. pr. E || τὸ ante αἰσθ. om. E || 32. codd. hoc loco non variant, vulgatam leg. etiam Philop. Simpl. et, ut videtur, Soph. 84, 11, sed Them. interpretatur: τὸ δὲ μεταξὺ ψόφου καὶ ὁσμῆς ἀήρ καὶ ὕδωρ, unde Brandisius coni. Them. legisse τὸ δὲ μεταξὺ ψόφου καὶ ὁσμῆς ἀνώνυμον, Torst. coni. ab Arist. haec fere scripta fuisse: τὸ δὲ μεταξὺ ψόφου μὲν καὶ ὁσμῆς ἀήρ τε καὶ ὕδωρ· τὸ δὲ κοινὸν ἀνώνυμον· κοινὸν..., vulgatam defendit Barco, p. 58, τὸ δὲ μεταξὺ...b, 3. λεχθήσεται unc. incl. Essen || 33. δὴ om. S U V W X y || 34. χρώματος P || post ὁσμὴν virgulam posuit Rodier || δ ἐν] ὅν S X, ὅν ἐν P, ἐν T V.

ὑπάρχει τούτοις· φαίνεται γὰρ καὶ τὰ ἔνδρα τῶν ζώων 35  
 ἔχειν αἴσθησιν ὁσμῆς. ἀλλ' ὁ μὲν ἄνθρωπος καὶ τῶν πεζῶν 4191  
 ὅσα ἀναπνεῖ, ἀδυνατεῖ ὁσμᾶσθαι μὴ ἀναπνέοντα. ἡ δ' αἰ-  
 τία καὶ περὶ τούτων ὕστερον λεχθήσεται.

- 8 Νῦν δὲ πρῶτον περὶ ψόφου καὶ ἀκοῆς διορίσωμεν. ἔστι  
 δὲ διττὸς ὁ ψόφος· ὁ μὲν γὰρ ἐνεργεία τις, ὁ δὲ δυνάμει· 5  
 τὰ μὲν γὰρ οὗ φαμεν ἔχειν ψόφον, οἷον σπόγγον, ἔρια, τὰ  
 δ' ἔχειν, οἷον χαλκὸν καὶ ὅσα στερεὰ καὶ λεία, ὅτι δύνα-  
 ται ψοφῆσαι. τοῦτο δ' ἐστὶν αὐτοῦ μεταξὺ καὶ τῆς ἀκοῆς  
 2 ἐμποιῆσαι ψόφον ἐνεργεία. γίνεται δ' ὁ κατ' ἐνέργειαν ψό-  
 φος αἰετίνος πρὸς τι καὶ ἐν τινι· πληγὴ γάρ ἐστιν ἡ ποι- 10  
 οὔσα. διὸ καὶ ἀδύνατον ἐνὸς ὄντος γενέσθαι ψόφον· ἕτερον  
 γὰρ τὸ τύπτειν καὶ τὸ τυπτόμενον· ὥστε τὸ ψοφοῦν πρὸς τι  
 ψοφεῖ· πληγὴ δ' οὐ γίνεται ἄνευ φορᾶς. ὥσπερ δ' εἵπομεν,  
 οὐ τῶν τυχόντων πληγὴ ὁ ψόφος· οὐθένα γὰρ ποιεῖ ψόφον  
 ἔρια ἂν πληγῇ, ἀλλὰ χαλκὸς καὶ ὅσα λεία καὶ κοῖλα, 15  
 ὁ μὲν χαλκός, ὅτι λείος· τὰ δὲ κοῖλα τῇ ἀνακλάσει πολ-  
 λὰς ποιεῖ πληγὰς μετὰ τὴν πρώτην, ἀδυνατοῦντος ἐξελθεῖν  
 τοῦ κινηθέντος. ἔτι ἀκούεται ἐν ἀέρι καὶ ὕδατι, ἀλλ' ἦττον·  
 3 οὐκ ἔστι δὲ ψόφου κύριος ὁ ἀήρ οὐδὲ τὸ ὕδωρ· ἀλλὰ δεῖ  
 στερεῶν πληγὴν γενέσθαι πρὸς ἄλληλα καὶ πρὸς τὸν ἀέρα. 20  
 τοῦτο δὲ γίνεται, ὅταν ὑπομένῃ πληγεῖς ὁ ἀήρ καὶ μὴ δια-  
 χυθῇ. διὸ ἐὰν ταχέως καὶ σφοδρῶς πληγῇ, ψοφεῖ· δεῖ γὰρ  
 φθάσαι τὴν κίνησιν τοῦ ῥαπίζοντος τὴν θρύψιν τοῦ ἀέρος,  
 ὥσπερ ἂν εἰ σωρὸν ἢ ὄρμαθὸν ψάμμου τύπτοι τις φερόμε-  
 4 νον ταχύ. ἡχῶ δὲ γίνεται, ὅταν ἀπὸ τοῦ ἀέρος ἐνὸς γενομέ- 25  
 νου διὰ τὸ ἀγγεῖον τὸ διορίσαν καὶ κωλύσαν θρυφθῆναι

419 b, 1. ὁσμῆς et 2. ὁσμᾶσθαι ET || ἀλλ'...4. διορίσωμεν] ex Themistii et Sophoniae interpretationibus Torst. coni. Arist. haec fere scripsisse: ἀλλ' ὁ μὲν ἄνθρωπος καὶ τῶν πεζῶν ὅσα ἀναπνεῖ ἀδυνατεῖ ὁσμᾶσθαι μὴ ἀναπνέοντα, τὰ δὲ ἔνδρα ὁσμᾶται καὶ μὴ ἀναπνέοντα. ἡ δ' αἰτία καὶ περὶ τούτων ὕστερον λεχθήσεται. νῦν δ' ἐκ τῶν εἰρημένων θῆλον τί ἐστιν θψις. μετὰ δὲ ταῦτα λεκτέον περὶ ἀκοῆς καὶ ὁσφρήσεως· καὶ πρῶτον μὲν περὶ ψόφου καὶ ἀκοῆς διορίσωμεν, Simplicium vulgatam legisse et ex interpret. huius loci et quae p. 138 de Alexandro dicit certum est, vulgatam defendit Wilson, Trans. of Ox. Philol. Soc. 1882/3, p. 6 || 4. ἀκοῆς] ὁσφρήσεως E W X y et Soph., reliqui ἀκοῆς, etiam Them. || 5. ἐνεργεία (i.e. casu dativo) E (Trend.) et δυνάμει E Them. Simpl. Philop. Soph. Torst., ἐνέργεια et δύναμις reliqui ante Torst. omnes || τις post ἐνεργεία om. Soph., leg. Them. Simpl. || 7. χαλκός E, χαλκὸν etiam Them. Soph. || 8. τοῦτο δ' ἐστὶν...9. ἐνεργεία unc. incl. Essen || 10. post τινι addendum πλήττοντος censet Chandler || 11. γίνεσθαι X Soph., probat Susemihl || τὸν ψόφον E, τὸν om. Soph. || 15. ἔριον ἢ πατάξαν ἢ πληγέν, ἀλλὰ V X et margo U,



to colour. For the animals that live in water also appear to have the sense of smell. But man and the other land-animals which breathe are unable to smell without inhaling breath. The reason for this, too, must be reserved for future explanation.

Let us now begin by determining the nature of sound and 8  
 hearing. There are two sorts of sound, one a sound  
 which is operant, the other potential sound. For some  
 things we say have no sound, as sponge, wool; others, for ex-  
 ample, bronze and all things solid and smooth, we say have sound,  
 because they can emit sound, that is, they can produce actual  
 sound between the sonorous body and the organ of hearing. When 2  
 actual sound occurs it is always of something on something and  
 in something, for it is a blow which produces it. Hence it is  
 impossible that a sound should be produced by a single thing,  
 for, as that which strikes is distinct from that which is struck, that  
 which sounds sounds upon something. And a blow implies spatial  
 motion. As we stated above, it is not concussion of any two  
 things taken at random which constitutes sound. Wool, when  
 struck, emits no sound at all, but bronze does, and so do all smooth  
 and hollow things; bronze emits sound because it is smooth, while  
 hollow things by reverberation produce a series of concussions after  
 the first, that which is set in motion being unable to escape.  
 Further, sound is heard in air and, though more faintly,  
 in water. It is not the air or the water, however, which 3  
 chiefly determine the production of sound: on the contrary, there  
 must be solid bodies colliding with one another and with the air:  
 and this happens when the air after being struck resists the impact  
 and is not dispersed. Hence the air must be struck quickly and  
 forcibly if it is to give forth sound; for the movement of the striker  
 must be too rapid to allow the air time to disperse: just as would  
 be necessary if one aimed a blow at a heap of sand or a sandwhirl,  
 while it was in rapid motion onwards.

Echo is produced when the air is made to rebound backwards 4  
 like a ball from some other air which has become a single  
 mass owing to its being within a cavity which confines

vulgatam leg. sine dubio Philop. 359, 23 et fort. Soph. 84, 33 ἐν (v. l. et) πληγῇ || 18. ἐν  
 μὲν ἐν coni. Torst. || ἀλλ' ἥττον unc. incl. Torst., om. Soph., videntur legisse Them.  
 63, 20 Simpl. 140, 15 Philop. 359, 28 || 19. οὔτε TW, οὔτε δέ E, οὐδέ etiam Simpl.  
 Soph. || 20. καὶ] Torst. coni. ἡ καὶ, quod iam Steinhart coniecerat, vulgatam tuentur  
 Philop. Simpl. Soph. || 21. ὑπομένει E et fort. Simpl. 140, 27. 141, 6, ὑπομένη Soph. ||  
 24. ὥσπερ ἀν... 25. ταχύ unc. incl. Susemihl || 24. ἀν om. ST U X, leg. Soph. || σωρὸν  
 ἡ delendum censet Essen || 25] τι coni. Essen || 25. τάχει P || ἀπὸ τοῦ om. S U V X  
 Torst., leg. Soph. et Alex. de anima 48, 1 (sed ὑπὸ pro ἀπὸ) || γυρομένου U V W X Soph.

πάλιν ὁ ἀήρ ἀπωσθῇ, ὥσπερ σφαῖρα. ἔοικε δ' αἰετὶ γίνεσθαι  
 ἡχώ, ἀλλ' οὐ σαφές, ἐπεὶ συμβαίνει γε ἐπὶ τοῦ ψόφου  
 καθάπερ καὶ ἐπὶ τοῦ φωτός· καὶ γὰρ τὸ φῶς αἰετὶ ἀνακλᾶ-  
 ται (οὐδὲ γὰρ ἂν ἐγένετο πάντῃ φῶς, ἀλλὰ σκότος ἔξω τοῦ<sup>30</sup>  
 ἡλιουμένου), ἀλλ' οὐχ οὕτως ἀνακλᾶται ὥσπερ ἀφ' ὕδατος  
 ἢ χαλκοῦ ἢ καὶ τινος ἄλλου τῶν λείων, ὥστε σκιὰν ποιεῖν,  
 5 ἢ τὸ φῶς ὀρίζομεν. τὸ δὲ κενὸν ὀρθῶς λέγεται κύριον τοῦ  
 ἀκούειν. δοκεῖ γὰρ εἶναι κενὸν ὁ ἀήρ, οὗτος δ' ἐστὶν ὁ ποιῶν  
 ἀκούειν, ὅταν κινήθῃ συνεχῆς καὶ εἰς. ἀλλὰ διὰ τὸ ψαθυρὸς<sup>35</sup>  
 εἶναι οὐ γεγωνεῖ, ἂν μὴ λείον ἢ τὸ πληγέν. τότε δὲ εἰς γί-<sup>420a</sup>  
 νεται ἅμα διὰ τὸ ἐπίπεδον· ἐν γὰρ τὸ τοῦ λείου ἐπίπεδον.  
 6 ψοφητικὸν μὲν οὖν τὸ κινήτικόν ἐνός ἀέρος συνεχεῖα, μέχρις  
 ἀκοῆς. ἀκοῇ δὲ συμφυῆς ἀήρ· διὰ δὲ τὸ ἐν ἀέρι εἶναι, κινουμέ-  
 νου τοῦ ἔξω ὁ εἶσω κινεῖται. διόπερ οὐ πάντῃ τὸ ζῶον ἀκούει,<sup>5</sup>  
 οὐδὲ πάντῃ διέρχεται ὁ ἀήρ· οὐ γὰρ πάντῃ ἔχει ἀέρα τὸ κι-  
 νησόμενον μέρος καὶ ἔμψυχον. αὐτὸς μὲν δὴ ἀψοφον ὁ ἀήρ  
 διὰ τὸ εὐθρυπτον· ὅταν δὲ κωλυθῇ θρύπτεσθαι, ἢ τούτου  
 κίνησις ψόφος· ὁ δ' ἐν τοῖς ὥσιν ἐγκατακοδόμηται πρὸς τὸ  
 ἀκίνητος εἶναι, ὅπως ἀκριβῶς αἰσθάνηται πάσας τὰς δια-<sup>10</sup>  
 φορὰς τῆς κινήσεως. διὰ ταῦτα δὲ καὶ ἐν ὕδατι ἀκούο-  
 μεν, ὅτι οὐκ εἰσέρχεται πρὸς αὐτὸν τὸν συμφυῆ ἀέρα· ἀλλ'  
 οὐδ' εἰς τὸ οὖς διὰ τὰς ἑλικας. ὅταν δὲ τοῦτο συμβῇ, οὐκ  
 ἀκούει· οὐδ' ἂν ἡ μῆνιγξ κάμη, ὥσπερ τὸ ἐπὶ τῇ κόρῃ δέρ-  
 μα [ὅταν κάμη]. ἀλλὰ καὶ σημεῖον τοῦ ἀκούειν ἡ μὴ τὸ<sup>15</sup>

30. οὐ STUVX Them., οὐδὲ etiam Soph. || 33. ἦ] φ scripsit Torst. e solo Philop.,  
 ἦ etiam Soph. || 33. τὸ δὲ ..35. εἰς partim corrupta partim alieno loco posita esse  
 putat Torst., vide eius comment. crit. p. 148, tumentur Them. Philop. Simpl. Soph. ||  
 420 a, 1. Torst. suspicatur Arist. scripsisse τότε δὲ εἰς γίνεσθαι καὶ ἅμα ἀφάλλεσθαι,  
 διὰ τὸ ἐπίπεδον, similiter in interpret. Them. et Philop., vulgatam leg. etiam Soph. ||  
 2. ἅμα γὰρ διὰ U, ὅλος γὰρ ἅμα κινεῖται Philop. in paraphr. 363, 27 || 4. ἀκοῇ  
 δὲ συμφυῆς ἀήρ WPY Simpl. Philop. Prisc. Lyd. 16, 22 Soph. Torst. Kampe,  
 Erkenntnissth. d. Ar., p. 75 Bon., Ind. Ar. 720 a, 11 Rodier, ceteri libri et scripti  
 et impressi ἀκοῇ δὲ συμφυῆς ἀέρι, etiam Them. 64, 16 sq., sed 64, 17. 28 τῇ μῆνιγγι  
 συμφυῆς || διὰ τὸ ἔνα ἀέρα εἶναι coni. Steinhart, quod iam Iul. Pacius coniecerat, fort.  
 recte, probat Beare, διὰ τε τὸ, virgula ante διὰ posita, coni. dubitanter Susemihl, textum  
 tumentur Simpl. Philop. || 5. τὸ SUVX Bek. Trend., ὁ leg. etiam Them. Philop.  
 Torst. || ἔσω SU || κινεῖ STVW Bek. Trend., κινεῖται etiam Philop. Simpl. vet.  
 transl. Torst., cui assentitur etiam Hayduck, progr. Gryph. 1873, p. 2 || πάντα τὸ ζῶον  
 ἀκούει, ἀλλ' ὥσιν, οὐδὲ πάντα διέρχεται ὁ ἀήρ P, παντὶ μέρει τὸ ζῶον ἀκούει ἀλλ' ὥσιν·  
 οὐδὲ πανταχοῦ τοῦ σώματος διέρχεται· οὐ γὰρ WY, similia habent et Them. et Philop.,  
 fluxisse e priori editione putat Torst., sed nihil nisi interpretamentum est, vulgatam  
 tumentur Soph. Simpl. || 6. ὁ ἀήρ unc. incl. Torst., leg. Soph. || ἀέρα, ἀλλὰ τὸ κ. coni.

it and prevents its dispersion. It seems likely that echo is always produced, but is not always distinctly audible: since surely the same thing happens with sound as with light. For light is always being reflected; else light would not be everywhere, but outside the spot where the sun's rays fall there would be darkness. But it is not always reflected in the same way as it is from water or bronze or any other smooth surface; I mean, it does not always produce the shadow, by which we define light.

Void is rightly stated to be the indispensable condition of 5  
 hearing. For the air is commonly believed to be a void,  
 and it is the air which causes hearing, when being one  
 and continuous it is set in motion. But, owing to its  
 tendency to disperse, it gives out no sound unless that which is  
 struck is smooth. In that case the air when struck is simultaneously  
 reunited because of the unity of the surface; for a smooth body  
 presents a single surface.

That, then, is resonant which is capable of exciting motion in 6  
 a mass of air continuously one as far as the ear. There is air  
 naturally attached to the ear. And because the ear is in air, when  
 the external air is set in motion, the air within the ear moves.  
 Hence it is not at every point that the animal hears, nor that the  
 air passes through: for it is not at every point that the part which  
 is to set itself in motion and to be animate has a supply of air. Of  
 itself, then, the air is a soundless thing because it is easily broken  
 up. But, whenever it is prevented from breaking up, its movement  
 is sound. But the air within the ears has been lodged fast within  
 walls to make it immoveable, in order that it may perceive exactly  
 all the varieties of auditory movement. This is why we hear in  
 water also, because the water does not pass right up to the air  
 attached to the ear, nor even into the ear at all, because of its  
 convolutions. Should this happen, hearing is destroyed, as it is  
 by an injury to the membrane of the tympanum, and as sight is by  
 an injury to the cornea. Further, we have evidence whether we  
 hear or not, according as there is or is not always a ringing sound in

Torst., ἀλλὰ non leg. Philop. Soph. || 7. ἐμψυχον etiam Philop. Soph., ἐμψοφον coni.  
 Torst., cui assentiuntur Hayduck et Dittenberger, p. 1615, ἐμψυχον, ὥσπερ ἡ κόρη τὸ  
 ὑγρόν· αὐτὸ W P y et margo U vet. transl. et, ut videtur, Philop. 366, 9. 10. 11, non leg.  
 Soph., καὶ γὰρ πρὸς ἐμψυχον αὐτὸς, puncto post μέρος posito, legendum censet Essen ||  
 αὐτὸς e Them. scripsit Torst., cui assentiuntur Biehl et Rodier, ceteri αὐτὸ || 7. αὐτὸς μὲν  
 δὴ...9. ψόφος ante 419 b, 33. τὸ δὲ transponenda coni. Steinhart, Susemihl vero, mutato δὴ  
 in γὰρ, fort. ante 419 b, 25. ἡχώ || 10. ἀμετακίνητος coni. Hayduck || 12. τὸν συμφυῆ...  
 13. ἔλικας unc. incl. Torst., leg. Simpl. Philop. Soph. || 14. οὐτ' E T || 15. δταν κάμῃ  
 unc. inclusit Biehl, om. E T W P y Soph. || ἀλλὰ usque ad 18. ἴδιος unc. incl. Torst.,  
 tuentur Them. Simpl. Philop. Soph.

ἡχεῖν αἰεὶ τὸ οὗς ὥσπερ τὸ κέρας· αἰεὶ γὰρ οἰκείαν τινὰ κίνησιν ὁ ἀὴρ κινεῖται ὁ ἐν τοῖς ὠσίν· ἀλλ' ὁ ψόφος ἀλλότριος καὶ οὐκ ἴδιος. καὶ διὰ τοῦτό φασιν ἀκούειν τῷ κενῷ καὶ ἡ ἡχοῦντι, ὅτι ἀκούομεν τῷ ἔχοντι ὠρισμένον τὸν ἀέρα. πότερον δὲ ψοφεῖ τὸ τυπτόμενον ἢ τὸ τύπτον; ἢ καὶ ἄμφω, τρόπον δ' ἕτερον· ἔστι γὰρ ὁ ψόφος κίνησις τοῦ δυναμένου κινεῖσθαι τὸν τρόπον τοῦτον ὅνπερ τὰ ἀφαλλόμενα ἀπὸ τῶν λείων, ὅταν τις κρούσῃ. οὐ δὴ πᾶν, ὥσπερ εἴρηται, ψοφεῖ τυπτόμενον καὶ τύπτον, οἷον ἐὰν πατάξῃ βελόνη βελόνην· ἀλλὰ δεῖ τὸ τυπτόμενον ὁμαλὸν εἶναι, ὥστε τὸν ἀέρα ἀθροῦν 25  
 8 ἀβάλλεσθαι καὶ σείεσθαι. αἱ δὲ διαφοραὶ τῶν ψοφούντων ἐν τῷ κατ' ἐνέργειαν ψόφῳ δηλοῦνται· ὥσπερ γὰρ ἄνευ φωτὸς οὐχ ὁράται τὰ χρώματα, οὕτως οὐδ' ἄνευ ψόφου τὸ ὀξύ καὶ τὸ βαρὺ. ταῦτα δὲ λέγεται κατὰ μεταφορὰν ἀπὸ τῶν ἀπτῶν· τὸ μὲν γὰρ ὀξύ κινεῖ τὴν αἴσθησιν ἐν ὀλίγῳ 30  
 χρόνῳ ἐπὶ πολὺ, τὸ δὲ βαρὺ ἐν πολλῷ ἐπ' ὀλίγον. οὐ δὴ ταχὺ τὸ ὀξύ, τὸ δὲ βαρὺ βραδύ, ἀλλὰ γίνεται τοῦ μὲν διὰ τὸ τάχος ἢ κίνησις τοιαύτη, τοῦ δὲ διὰ βραδυτήτα. καὶ ἔοικεν ἀνάλογον ἔχειν τῷ περὶ τὴν ἀφήν ὀξεῖ καὶ ἄμ- 420b  
 βλεῖ· τὸ μὲν γὰρ ὀξύ οἶον κεντεῖ, τὸ δ' ἄμβλν οἶον ὠθεῖ διὰ τὸ κινεῖν τὸ μὲν ἐν ὀλίγῳ τὸ δὲ ἐν πολλῷ, ὥστε συμβαίνει τὸ μὲν ταχὺ τὸ δὲ βραδὺ εἶναι.  
 9 περὶ μὲν οὖν ψόφου ταύτη διωρίσθω. ἡ δὲ φωνὴ ψόφος τίς 5  
 ἐστὶν ἐμψύχου· τῶν γὰρ ἀψύχων οὐθὲν φωνεῖ, ἀλλὰ καθ' ὁμοιότητα λέγεται φωνεῖν, οἷον αὐλὸς καὶ λύρα καὶ ὅσα ἄλλα τῶν ἀψύχων ἀπότασιν ἔχει καὶ μέλος καὶ διάλεκτον. ἔοικε γὰρ ὅτι καὶ ἡ φωνὴ ταύτ' ἔχει. πολλὰ δὲ τῶν ζώων οὐκ ἔχουσι φωνήν, οἷον τὰ τε ἄναιμα καὶ τῶν ἐναίμων ἰχθύες. καὶ 10  
 τοῦτ' εὐλόγως, εἴπερ ἀέρος κίνησις τίς ἐστὶν ὁ ψόφος. ἀλλ'

16. αἰεὶ ante τὸ om. SVX, leg. Them. Soph. || αἰεὶ γὰρ] καὶ γὰρ coni. Essen ||

17. ὁ ante ἐν om. STUWX, leg. Soph. || 19. τὸν om. SUVX, leg. Simpl. ||

22. ἀλλόμενα SVX, ἀφαλλόμενα Them. Philop. Simpl. Soph. || 23. κρούσῃ] ἐπικρούσῃ

coni. Essen || 24. καὶ τύπτον om. SUVX, leg. Philop. Simpl. Soph. (qui ἢ pro

καὶ habet) || 25. ἀθρόον STUVWX || 26. ψόφων Ty Them. Soph. Theoph. ap.

Prisc. 17, 25, ψοφούντων etiam Philop. Simpl. || 31. ἐπ' om. SUVWY, leg. Them.

Philop. Simpl. || οὐ δὴ] ὥστε οὐχὶ TW Soph., ὥστε οὐδὲ V, οὕτω X, οὐ δὴ etiam

Simpl., οὐ δὴ...33. βραδυτήτα unc. incl. Susemihl, adversatur Rodier II, 299 ||

33. κίνησις] αἴσθησις coni. Essen || 420 b, 2. pro ἄμβλν οἶον habet βαρὺ ὥσπερ P ||

3. συμβαίνειν ES, συμβαίνει Simpl. Philop. Soph. || 8. γὰρ] δὲ S UV, γὰρ etiam Soph.

post γὰρ virgulam posuit Rodier || 10. ἀλλ' οὐδὲ τὰ ἔναιμα πάντα, οἶον ἰχθύες P || post

the ears, as in a horn : for the air imprisoned there is always moving with a proper motion of its own. But sound is something of external origin and is not native to the ear. And this is why it is said that we hear by means of what is empty and resonant, because that by which we hear has air confined within it.

Does that which is struck emit the sound or that which strikes ? 7 Is it not rather both, but each in a different way ? For sound is motion of that which is capable of being moved in the same manner as things rebound from smooth surfaces when struck sharply against them. Thus, as above remarked, it is not everything which, when struck or striking, emits sound : supposing, for instance, a pin were to strike against a pin, there would be no sound. The thing struck must be of even surface, so that the air may rebound and vibrate in one mass.

The varieties of resonant bodies are clearly distinguished by the 8 sound they actually emit. For, as without light colours are not seen, so without sound we cannot distinguish high and low Pitch. or acute and grave in pitch. These latter terms are used by analogy from tangible objects. For the acute, that is, the high, note moves the sense much in a little time, while the grave or low note moves it little in much time. Not that what is shrill is identically rapid, nor what is low is slow, but it is in the one case the rapidity, in the other the slowness, which makes the motion or sensation such as has been described. And it would seem that there is a certain analogy between the acute and grave to the ear and the acute and blunt to the touch. For that which is acute or pointed, as it were, stabs, while the blunt, as it were, thrusts, because the one excites motion in a short, the other in a long time, so that *per accidens* the one is quick, the other slow. Let this account of sound suffice.

Voice is a sound made by an animate being. No inanimate 9 thing is vocal, though it may by analogy be said to be Voice. vocal, as in the case of the pipe, the lyre and all other inanimate things that have pitch and tune and articulation : for these qualities, it would seem, the voice also possesses. But many animals have no voice : that is to say, all bloodless animals and, among animals that have blood, fishes. And this is what we might expect, since sound is a movement of air. Those fishes which

ἔχουσιν et post 11. ψόφος virgulas ponendas et καί...11. ψόφος post 13. τοιοῦτω transponendum censet Susemihl || 11. ἐπερ...ψόφος fortasse corrupta esse putat Torst., leg. Philop. Soph. Them. (qui pro ψόφος habet φωνή) || τίς om. SUVX et in paraphr. Them. Philop., leg. Soph. || 11. ἀλλ'...13. τοιοῦτω unc. incl. Torst., leg. Them. Philop. Soph., defendunt Wilson, Phil. Rundschau 1882, N. 47, Trans. of Ox. Phil. Soc. 1882-3, p. 9 et Susemihl.

οἱ λεγόμενοι φωνεῖν, οἷον ἐν τῷ Ἀχελῷφ, ψοφοῦσι τοῖς  
 10 βραγχίοις ἢ τινι ἐτέρῳ τοιούτῳ. φωνή δ' ἐστὶ ζῶου ψόφος,  
 καὶ οὐ τῷ τυχόντι μορίῳ. ἀλλ' ἐπεὶ πᾶν ψοφεῖ τύπτουτός  
 τινος καὶ τι καὶ ἐν τινι, τοῦτο δ' ἐστὶν ἀήρ, εὐλόγως ἂν 15  
 φωνοίη ταῦτα μόνα ὅσα δέχεται τὸν ἀέρα. ἤδη γὰρ τῷ  
 ἀναπνεομένῳ καταχρῆται ἡ φύσις ἐπὶ δύο ἔργα, καθάπερ  
 τῇ γλώττῃ ἐπὶ τε τὴν γεῦσιν καὶ τὴν διάλεκτον, ὧν ἡ μὲν  
 γεῦσις ἀναγκαῖον (διὸ καὶ πλείοσιν ὑπάρχει), ἡ δ' ἐρμη-  
 νεῖα ἔνεκα τοῦ εὖ, οὕτω καὶ τῷ πνεύματι πρὸς τε τὴν θερ- 20  
 μότητα τὴν ἐντὸς ὡς ἀναγκαῖον (τὸ δ' αἴτιον ἐν ἐτέροις εἰ-  
 11 ρήσεται) καὶ πρὸς τὴν φωνήν, ὅπως ὑπάρχῃ τὸ εὖ. ὄργα-  
 νον δὲ τῇ ἀναπνοῇ ὁ φάρυγξ· οὗ δ' ἔνεκα καὶ τὸ μόριόν  
 ἐστὶ τοῦτο, πλεύμων· τούτῳ γὰρ τῷ μορίῳ πλείστον ἔχει τὸ  
 θερμὸν τὰ περὶ τῶν ἄλλων. δεῖται δὲ τῆς ἀναπνοῆς καὶ 25  
 ὁ περὶ τὴν καρδίαν τόπος πρῶτος. διὸ ἀναγκαῖον εἶσω ἀνα-  
 πνεομένου εἰσιεῖναι τὸν ἀέρα. ὥστε ἡ πληγὴ τοῦ ἀναπνεομένου  
 αἵματος ὑπὸ τῆς ἐν τούτοις τοῖς μορίοις ψυχῆς πρὸς τὴν κα-  
 λουμένην ἀρτηρίαν φωνή ἐστίν. οὐ γὰρ πᾶς ζῶου ψόφος φωνή,  
 καθάπερ εἵπομεν (ἐστὶ γὰρ καὶ τῇ γλώττῃ ψοφεῖν καὶ 30  
 ὡς οἱ βήττοντες), ἀλλὰ δεῖ ἔμψυχόν τε εἶναι τὸ τύπτου  
 καὶ μετὰ φαντασίας τινός· σημαντικὸς γὰρ δὴ τις ψόφος  
 ἐστὶν ἡ φωνή· καὶ οὐ τοῦ ἀναπνεομένου αἵματος, ὥσπερ ἡ βήξ,  
 12 ἀλλὰ τούτῳ τύπτει τὸν ἐν τῇ ἀρτηρίᾳ πρὸς αὐτήν. σημείον 421a  
 δὲ τὸ μὴ δύνασθαι φωνεῖν ἀναπνέοντα μηδ' ἐκπνέοντα,  
 ἀλλὰ κατέχοντα· κινεῖ γὰρ τούτῳ ὁ κατέχων. φανερόν δὲ  
 καὶ διότι οἱ ἰχθύες ἄφωνοι· οὐ γὰρ ἔχουσι φάρυγγα. τοῦτο  
 δὲ τὸ μόριον οὐκ ἔχουσιν, ὅτι οὐ δέχονται τὸν ἀέρα οὐδ' ἀνα- 5  
 πνέουσιν. δι' ἣν μὲν οὖν αἰτίαν, ἕτερός ἐστι λόγος.

13. post ψόφος Torst. censet excidisse: οὐ πᾶς δέ, vulgatam tuetur Soph., qui  
 14. καὶ omisit, οὐ παντὸς δέ, ἀλλ' οὐδὲ παντὶ μορίῳ in paraphr. Them. || 15. καὶ ante  
 τι om. TW Soph., leg. Philop. Simpl. || 18. τε om. S UVWX, leg. Them. Soph.  
 v. l. (om. τε cum codd. Hayduck 88, 36) || 19. καὶ om. ET, leg. Them. Soph. ||  
 20. ἔνεκα STUVWX || 21. εἰρηται SVWX Soph. et sine dubio Philop. 381, 4 ||  
 22. ὑπάρχει EV, ὑπάρχει TW || 23. καὶ om. ESUWY || 24. πνεύμων STUVWXy  
 Them. Philop. Simpl. Soph. || πλεον SUVWY Them. Soph., πλεον T || 28. ψυχικῆς  
 δυνάμεως πρὸς Wy et Philop., vulgatam tuentur Them. Alex. apud Simpl. Soph. ||  
 30. καὶ prius om. S UVX, posterius EW, leg. καὶ utrobique Soph. || 31. τε leg. etiam  
 Soph., τι SUVX || τὸ τύπτου unc. incl. Essen || 32. δὴ om. S UVWX, leg. Soph. ||  
 33. ἀναπνεομένου] ἀνάγκη ἐκπνεομένου coni. Essen || βήξις ETy Them. (sed v. l. βήξ),

are said to possess voice, such as those in the Achelous, merely make a noise with their gills or some other such part. Voice is <sup>10</sup> sound made by an animal, and not by any part of its body indifferently. But, as in every case of sound there is something that strikes, something struck and a medium, which is air, it is reasonable that only creatures which inhale air should have voice. For here nature uses the air that is inhaled for two purposes, just as it uses the tongue for tasting and for speech, the former use, for tasting, being indispensable and therefore more widely found, while expression of thought is a means to well-being. Similarly nature uses the breath first as a necessary means to the maintenance of internal warmth (the reason for which shall be explained elsewhere) and, further, as a means of producing voice and so promoting well-being. The organ of respiration is the larynx, and the part to which this <sup>11</sup> part is subservient is the lung: for it is this organ, namely, the lung, which enables land animals to maintain a higher temperature than others. Respiration is also needed primarily for the region about the heart. Hence, as we draw breath, the air enters: and so the impact upon the windpipe, as it is called, of the air breathed is voice, the cause of the impact being the soul which animates the vocal organs. For, as we said before, it is not every sound made by an animal that is voice. Noise can be produced even with the tongue or as in coughing: but it is necessary for voice that the part which strikes should be animate and that some mental image should be present. For voice is certainly a sound which has significance and is not like a cough, the noise of air respired: rather with this air the animal makes the air in the windpipe strike against the windpipe. A proof of this is the fact that we cannot speak while <sup>12</sup> inhaling or exhaling breath, but only while we hold it in: for anyone who holds his breath uses the breath so held to cause motion. And it is evident why fishes are voiceless. It is because they have no larynx. And they are without this part because they do not take in the air nor breathe. Why this is so does not concern us here.

βῆξ etiam Philop. Simpl. Soph. || 421 a, 1. τῷ οὕτω τύπτειν conl. Essen || 3. ἀλλὰ κατέχοντα om. Ey et Soph. || τοῦτο EVW Bek. Trend., τοῦτῃ Them. Philop. Simpl. Soph. vet. transl. Torst. || δέ] γὰρ STUVW || 5. ἀναπνεύουσιν. ἀλλ' οἱ λέγοντες οὕτως ἀμαρτάνουσιν. δι' SVW et vet. transl., ἀλλ' οἱ λέγοντες ὅτι φωνοῦσιν οἱ ἰχθύες διαμαρτάνουσιν. δι' X, et certe Philoponus legit tale additamentum 384, 11 sqq. || 6. μὲν οὖν] δ' VX, om. SU || ἔσται SUVX Soph., ἔστω in paraphr. Philop.

9 Περὶ δὲ ὁσμῆς καὶ ὁσφραντοῦ ἥττον εὐδιόριστόν ἐστι τῶν  
 εἰρημένων· οὐ γὰρ δῆλον ποῖόν τί ἐστιν ἡ ὁσμή, οὕτως ὡς ὁ  
 ψόφος ἢ τὸ χρώμα. αἴτιον δ' ὅτι τὴν αἴσθησιν ταύτην οὐκ  
 ἔχομεν ἀκριβῆ, ἀλλὰ χείρῳ πολλῶν ζώων· φαύλως γὰρ 10  
 ἄνθρωπος ὁσμάται, καὶ οὐθενὸς ὁσφραίνεται τῶν ὁσφραντῶν  
 ἄνευ τοῦ λυπηροῦ ἢ τοῦ ἡδέος, ὡς οὐκ ὄντος ἀκριβοῦς τοῦ αἰσθη-  
 2 τηρίου. εὐλογον δ' οὕτω καὶ τὰ σκληρόφθαλμα τῶν χρωμά-  
 των αἰσθάνεσθαι, καὶ μὴ διαδήλους αὐτοῖς εἶναι τὰς δια-  
 φορὰς τῶν χρωμάτων πλὴν τῷ φοβερῷ καὶ ἀφόβῳ· οὕτω 15  
 δὲ καὶ τὰς ὁσμάς τὸ τῶν ἀνθρώπων γένος. ἔοικε μὲν γὰρ  
 ἀνάλογον ἔχειν πρὸς τὴν γεῦσιν καὶ ὁμοίως τὰ εἶδη τῶν  
 χυμῶν τοῖς τῆς ὁσμῆς, ἀλλ' ἀκριβεστέραν ἔχομεν τὴν γεῦ-  
 σιν διὰ τὸ εἶναι αὐτὴν ἀφήν τινα, ταύτην δ' ἔχειν τὴν αἴ-  
 σθησιν τὸν ἄνθρωπον ἀκριβεστάτην· ἐν μὲν γὰρ ταῖς ἄλλαις 20  
 λείπεται πολλῶν τῶν ζώων, κατὰ δὲ τὴν ἀφήν πολλῷ τῶν  
 ἄλλων διαφερόντως ἀκριβοῖ. διὸ καὶ φρονιμώτατόν ἐστι τῶν  
 ζώων. σημεῖον δὲ τὸ καὶ ἐν τῷ γένει τῶν ἀνθρώπων παρὰ  
 τὸ αἰσθητήριον τοῦτο εἶναι εὐφυνεῖς καὶ ἀφυνεῖς, παρ' ἄλλο  
 δὲ μηδέν· οἱ μὲν γὰρ σκληρόσαρκοι ἀφυνεῖς τὴν διάνοιαν, 25  
 3 οἱ δὲ μαλακόσαρκοι εὐφυνεῖς. ἔστι δ', ὥσπερ χυμὸς ὁ μὲν  
 γλυκὺς ὁ δὲ πικρὸς, οὕτω καὶ ὁσμαί (ἀλλὰ τὰ μὲν ἔχουσι  
 τὴν ἀνάλογον ὁσμὴν καὶ χυμόν, λέγω δὲ οἷον γλυκεῖαν  
 ὁσμὴν καὶ γλυκὺν χυμόν, τὰ δὲ τούναντίον)· ὁμοίως δὲ καὶ  
 δριμεία καὶ αὐστηρὰ καὶ ὀξεῖα καὶ λιπαρά ἐστὶν ὁσμῆ· 30  
 ἀλλ' ὥσπερ εἵπομεν, διὰ τὸ μὴ σφόδρα διαδήλους εἶναι τὰς  
 ὁσμάς ὥσπερ τοὺς χυμούς, ἀπὸ τούτων εἴληφε τὰ ὀνόματα  
 καθ' ὁμοιότητα τῶν πραγμάτων· ἡ μὲν γὰρ γλυκεῖα [ἀπὸ 421b  
 τοῦ] κρόκου καὶ μέλιτος, ἡ δὲ δριμεία θύμου καὶ τῶν τοιού-  
 4 των· τὸν αὐτὸν δὲ τρόπον καὶ ἐπὶ τῶν ἄλλων. ἔστι δ' ὥσπερ  
 καὶ ἡ ἀκοὴ καὶ ἐκάστη τῶν αἰσθήσεων, ἡ μὲν τοῦ ἀκουστοῦ

8. ἡ om. S U X Philop., leg. Simpl. 151, 33 || ὁδμή E T W, ὁσμή Them. Simpl. Philop. Soph. || 9. ψ. ἡ τὸ φῶς ἢ T W X y Philop. 388, 4 Simpl. et, ut videtur, Them. 67, 29, om. ἡ τὸ φῶς Soph. || 10. χείρονα S W Philop. 386, 5 (v. l. χείρον), χείρων E, χείρον X Simpl. 152, 1 || 11. ὁσφραίνεται E T W vet. transl. Torst., αἰσθάνεται reliqui ante Torst. omnes et, ut videtur, Them. 67, 33 || 16. ὁδμάς E T W y || καὶ περὶ τὰς ὁδμάς P, καὶ κατὰ τὰς ὁδμάς conl. Christ || 21. πολλῶν] πολλῶ ES U V Bek., πολλῶν sine dubio Them. 67, 30 Philop. 388, 19 Simpl. 151, 21. 30, πολλοῖς Soph. 91, 1 || τῶν ante ζώων om. X P || πολλῶ EST U V Wy, etiam Them., qui 68, 9 σύμπαντα πλεονεκτοῦμεν τὰ ζῶα interpretatur, Philop. 386, 6. 388, 19 sq. Soph. 91, 2 Trend. Torst., om. X,



Of smell and the object of smell it is less easy to speak de-<sup>9</sup>  
 finitely than of the senses above-mentioned: for the nature of  
 odour is by no means so clear as is the nature of sound or of  
 colour. The reason is that this sense in us is not exact, but  
 inferior to that of many animals. In fact, man has  
 a poor olfactory sense and perceives none of the objects  
 of smell unless they be painful or pleasant, which im-  
 plies that the organ is wanting in accuracy. It is reasonable to<sup>2</sup>  
 suppose that animals with hard eyes perceive colour in the same  
 vague way and do not distinguish the varieties of colour except in  
 so far as they do, or do not, inspire fear. And this is the way in  
 which mankind perceive odours. For it would seem that, while  
 there is an analogy to taste and the varieties of flavour answer  
 to the varieties of smell, our sense of taste is more exact because  
 it is a modification of touch and the sense of touch is the most exact  
 of man's senses. In the other senses man is inferior to many of  
 the animals, but in delicacy of touch he is far superior to the rest.  
 And to this he owes his superior intelligence. This may be seen  
 from the fact that it is this organ of sense and nothing else which  
 makes all the difference in the human race between the natural  
 endowments of man and man. For hard-skinned men are dull of  
 intellect, while those who are soft-skinned are gifted.

As with flavours, so with odours: some are sweet, some bitter.<sup>3</sup>  
 (But in some objects smell and flavour correspond; for example,  
 they have sweet odour and sweet flavour: in other  
 things the opposite is the case.) Similarly, too, an odour  
 may be pungent, irritant, acid or oily. But because, as  
 we said above, odours are not as clearly defined as the corre-  
 sponding flavours, it is from these latter that the odours have  
 taken their names, in virtue of the resemblance in the things.  
 Thus the odour of saffron and honey is sweet, while the odour  
 of thyme and the like is pungent; and so in all the other cases.  
 Again, smell corresponds to hearing and to each of the other<sup>4</sup>  
 senses in that, as hearing is of the audible and inaudible, and

πολλῶν nulla codicum, quos quidem contulit, auctoritate Bek., confirmat P || τῶν ἄλλων  
 om. X || 23. καὶ τὸ E S T W, om. καὶ X. || 27. ὀσμᾶι et 28. et 29. ὀσμῇν E || 27. ἀλλὰ...  
 29. τοῦναντίον in parenth. ponenda censet M. Alford, post 27. ὀσμᾶι et post 29. τοῦναντίον  
 punct. vulg. || 29. τὰ δὲ τοῦναντίον ante 28. λέγω S U V X, eodem loco, quo vulgata, etiam  
 Them. Philop. || 30. ὀσμῇ sine articulo E (Bhl.) || post ὀσμῇ punct. vulg. || 32. ὀσμὰς E ||  
 421 b, 1. ἀπὸ τοῦ solus E vet. transl. Bek. Trend. Biehl, ἀπὸ τοῦ unc. incl. Rodier,  
 om. reliqui, etiam Simpl. 153, 34 Torst., qui virgulam post γλυκεῖα et post 2. δριμύεια  
 posuit || 2. καὶ τοῦ μ. T Bek. Trend., τοῦ om. Simpl. || 4. καὶ ἡ om. S U V X, καὶ om.  
 W Them. Bek. Trend., ἡ ἀκοῇ exstingui vult Madvig.

καὶ ἀνηκούστου, ἡ δὲ τοῦ ὁρατοῦ καὶ ἀοράτου, καὶ ἡ ὁσφρη- 5  
σις τοῦ ὁσφραντοῦ καὶ ἀνοσφράντου. ἀνὸσφραντον δὲ τὸ μὲν  
παρὰ τὸ ὅλως ἀδύνατον ἔχειν ὁσμὴν, τὸ δὲ μικρὰν ἔχον  
καὶ τὸ φαύλην. ὁμοίως δὲ καὶ τὸ ἄγευστον λέγεται.

- 5 ἔστι δὲ καὶ ἡ ὁσφρησις διὰ τοῦ μεταξύ, οἶον ἀέρος ἢ ὕδατος·  
καὶ γὰρ τὰ ἔνυδρα δοκοῦσιν ὁσμῆς αἰσθάνεσθαι, ὁμοίως καὶ 10  
ἔναιμα καὶ ἄναιμα, ὥσπερ καὶ τὰ ἐν τῷ ἀέρι· καὶ γὰρ  
τούτων ἔνια πόρρωθεν ἀπαντᾷ πρὸς τὴν τροφήν ὑποσμα  
6 γινόμενα. διὸ καὶ ἄπορον φαίνεται, εἰ πάντα μὲν ὁμοίως  
ὁσμᾶται, ὃ δ' ἄνθρωπος ἀναπνέων, μὴ ἀναπνέων δὲ  
ἄλλ' ἐκπνέων ἢ κατέχων τὸ πνεῦμα οὐκ ὁσμᾶται, οὔτε 15  
πόρρωθεν οὔτ' ἐγγύθεν, οὔδ' ἂν ἐπὶ τοῦ μυκτῆρος ἐντὸς τεθῇ·  
καὶ τὸ μὲν ἐπ' αὐτῷ τιθέμενον τῷ αἰσθητηρίῳ ἀναίσθητον  
εἶναι κοινὸν πάντων· ἀλλὰ τὸ ἄνευ τοῦ ἀναπνεῖν μὴ αἰσθά-  
νεσθαι ἴδιον ἐπὶ τῶν ἀνθρώπων· δηλὸν δὲ πειρωμένοις· ὥστε  
τὰ ἄναιμα, ἐπειδὴ οὐκ ἀναπνέουσιν, ἑτέραν ἂν τιν' αἰσθησιν 20  
ἔχοι παρὰ τὰς λεγομένας. ἀλλ' ἀδύνατον, εἴπερ τῆς ὁσμῆς  
αἰσθάνεται· ἡ γὰρ τοῦ ὁσφραντοῦ αἰσθησις καὶ δυσώδους  
καὶ εὐώδους ὁσφρησίς ἐστιν. ἔτι δὲ καὶ φθειρόμενα φαίνεται  
ὑπὸ τῶν ἰσχυρῶν ὁσμῶν ὑφ' ὧνπερ ἄνθρωπος, οἶον ἀσφάλ-  
του καὶ θείου καὶ τῶν τοιούτων. ὁσφραίνεσθαι μὲν οὖν ἀναγ- 25  
7 καίον, ἀλλ' οὐκ ἀναπνέοντα. ἔοικε δὲ τοῖς ἀνθρώποις διαφέ-  
ρειν τὸ αἰσθητήριον τοῦτο πρὸς τὸ τῶν ἄλλων ζώων, ὥσπερ  
τὰ ὄμματα πρὸς τὰ τῶν σκληροφθάλμων· τὰ μὲν γὰρ ἔχει  
φράγμα καὶ ὥσπερ ἔλυτρον τὰ βλέφαρα, ἃ μὴ κινήσας  
μηδ' ἀνασπάσας οὐχ ὁρᾷ· τὰ δὲ σκληρόφθαλμα οὐδὲν 30  
ἔχει τοιούτον, ἀλλ' εὐθέως ὁρᾷ τὰ γινόμενα ἐν τῷ δια-  
φανεῖ· οὕτως οὖν καὶ τὸ ὁσφραντικὸν αἰσθητήριον τοῖς μὲν  
ἀκάλυφες εἶναι, ὥσπερ τὸ ὄμμα, τοῖς δὲ τὸν ἀέρα δεχο- 422a  
μένοις ἔχειν ἐπικάλυμμα, ὃ ἀναπνεόντων ἀποκαλύπτεσθαι,  
8 διευρυνομένων τῶν φλεβίων καὶ τῶν πόρων. καὶ διὰ τοῦτο

5. καὶ τοῦ ἀνηκ. TX || καὶ τοῦ ἀορ. TX, utroque loco om. τοῦ Them. || ἡ om. SVX, leg. Them. || 6. καὶ τοῦ ἀνοσφρ. STUX, om. τοῦ Them. || 7. ὁσμὴν EW || 8. τὸ ante φαύλην om. SWX Bek. Trend., leg. Them. || 10. ὁσμῆς E || ὁμοίως δὲ καὶ SUVX Philop. Bek. Trend., ὁμοίως καὶ E (Trend.) et TW || 11. τὰ ἔναιμα καὶ τὰ ἀν. SUVX Bek. Trend. Philop., τὰ ἔναιμα Soph. 92, 14 (<καὶ τὰ ἄναιμα> a Soph. omissa add. Hayduck) || 13. καὶ om. E || 14. et 15. ὁσμ. E || 14. μὲν post ἀναπνέων SUVX Bek. Trend., μὲν ὁσμᾶται W, μὲν om. etiam Them. || μὴ ἀναπνέων δὲ om. SUVX, leg. Them. || 15. ἀλλ' ἐκπνέων om. Wy Them. || 16. post τεθῇ 16. et post πειρωμένοις 19. cola

sight of the visible and invisible, so smell is of the odorous and inodorous. By inodorous may be meant either that which is wholly incapable of having odour or that which has a slight or faint odour. The term tasteless involves a similar ambiguity.

Further, smell also operates through a medium, namely, air or 5  
 The water. For water animals, too, whether they are, or  
 medium. are not, possessed of blood, seem to perceive odour as much as the creatures in the air: since some of them also come from a great distance to seek their food, guided by the scent.

Hence there is an obvious difficulty, if the process of smell is 6  
 Inhalation everywhere the same, and yet man smells when in-  
 a neces- haling but does not smell when instead of inhaling he  
 sary con- is exhaling or holding his breath, no matter whether  
 dition in the object be distant or near, or even if it be placed  
 man. on the inside of the nostril. The inability to perceive what is placed immediately on the sense-organ man shares with all animals: what is peculiar to him is that he cannot smell without inhaling. This is made plain by experiment. Consequently bloodless animals, since they do not breathe, might be thought to have a distinct sense other than those commonly recognised. But, we reply, that is impossible, since it is odour which they perceive. For perception of odour, be it fragrant or noisome, constitutes smelling. Moreover, it is found that these bloodless animals are destroyed by the same powerful odours as man, such as asphalt, brimstone and the like. It follows then that they do smell, but not by inhaling breath.

It would seem, again, that in man the organ of this sense 7  
 differs from that of the other animals, as his eyes differ from those  
 of hard-eyed animals. Man's eyes have, in the eyelids,  
 Nostrils. a sort of screen or sheath and without moving or opening them he cannot see: while the hard-eyed animals have nothing of the kind, but at once see whatever is taking place in the transparent medium. So, too, it seems, the organ of smell in some animals is unenclosed, just as is the eye, but in those which take in the air it has a curtain, which is removed in the process of inhaling, by dilatation of the veins and passages. And this is the 8

ponenda censet Hayduck, progr. Gryph. 1873, p. 3, recte || 19. pro ἀνθρώπων legi vult δσφραντῶν Hayduck, quod probant Susemihl, Jen. Lit. Zt. 1877, p. 708 Rodier II, 312 Beare, p. 150, adn. 1 || 21. ἀλλ' ἀδύνατον a sensu suspecta videntur Trend., leg. Soph. et sine dubio Them. || 23. δὴ E γ, δὲ etiam Them. || 29. φράγμα] πῶμα W, quod ex priore editione huc illatum esse suspicatur Torst. || 31. εὐθὺς S U V X et in interpret. Them. Soph., εὐθέως Simpl. || 422 a, 3. φλεβῶν E T Them., φλεβίων etiam Philop.

τὰ ἀναπνέοντα οὐκ ὁσμάται ἐν τῷ ὑγρῷ· ἀναγκαῖον γὰρ ὁσφρανθῆναι ἀναπνεύσαντα, τοῦτο δὲ ποιεῖν ἐν τῷ ὑγρῷ ἄδύνατον. ἔστι δ' ἡ ὁσμή τοῦ ξηροῦ, ὥσπερ ὁ χυμὸς τοῦ ὑγροῦ, τὸ δὲ ὁσφραντικὸν αἰσθητήριον δυνάμει τοιοῦτον.

- 10 Τὸ δὲ γευστὸν ἐστὶν ἄπτόν τι· καὶ τοῦτ' αἷτιον τοῦ μὴ εἶναι αἰσθητὸν διὰ τοῦ μεταξὺ ἁλλοτρίου ὄντος σώματος· οὐδὲ γὰρ ἡ ἀφή. καὶ τὸ σῶμα δὲ ἐν ᾧ ὁ χυμὸς, τὸ γευσ- 10  
στὸν, ἐν ὑγρῷ ὡς ὕλη· τοῦτο δ' ἄπτόν τι. διὸ καὶ ἐν  
ὑδατι ἤμεν, ἡσθανόμεθ' ἂν ἐμβληθέντος τοῦ γλυκέος·  
2 οὐκ ἦν δ' ἂν ἡ αἰσθησις ἡμῖν διὰ τοῦ μεταξὺ, ἀλλὰ τῷ  
μειχθῆναι τῷ ὑγρῷ, καθάπερ ἐπὶ τοῦ ποτοῦ. τὸ δὲ χρώμα  
οὐχ οὕτως ὁράται τῷ μείγνυσθαι, οὐδὲ ταῖς ἀπορροαῖς. ὥς 15  
μὲν οὖν τὸ μεταξὺ οὐθέν ἐστιν· ὥς δὲ χρώμα τὸ ὁρατὸν, οὕτω  
τὸ γευστὸν ὁ χυμὸς. οὐθὲν δὲ ποιεῖ χυμοῦ αἰσθησιν ἄνευ  
ὑγρότητος, ἀλλ' ἔχει ἐνεργεία ἥ δυνάμει ὑγρότητα, οἷον τὸ  
ἄλμυρόν· εὐτηκτόν τε γὰρ αὐτὸ καὶ συντηκτικὸν γλώττης.  
3 ὥσπερ δὲ καὶ ἡ ὄψις ἐστὶ τοῦ τε ὁρατοῦ καὶ τοῦ ἀοράτου (τὸ 20  
γὰρ σκότος ἀόρατον, κρίνει δὲ καὶ τοῦτο ἡ ὄψις), ἔτι τοῦ  
λίαν λαμπροῦ (καὶ γὰρ τοῦτο ἀόρατον, ἄλλον δὲ τρόπον τοῦ  
σκοτούς), ὁμοίως δὲ καὶ ἡ ἀκοή ψόφου τε καὶ σιγῆς, ὧν  
τὸ μὲν ἀκουστὸν τὸ δ' οὐκ ἀκουστὸν, καὶ μεγάλου ψόφου,  
καθάπερ ἡ ὄψις τοῦ λαμπροῦ (ὥσπερ γὰρ ὁ μικρὸς ψόφος 25  
ἀνήκουστος, τρόπον τινὰ καὶ ὁ μέγας τε καὶ ὁ βίαιος), ἀό-  
ρατον δὲ τὸ μὲν ὅλως λέγεται, ὥσπερ καὶ ἐπ' ἄλλων τὸ  
ἄδύνατον, τὸ δ' εἶναι πεφυκὸς μὴ ἔχῃ ἢ φαύλως, ὥσπερ  
τὸ ἄπουν καὶ τὸ ἀπύρηνον· οὕτω δὲ καὶ ἡ γεύσις τοῦ γευστοῦ  
τε καὶ ἀγεύστου, τοῦτο δὲ τὸ μικρὸν ἢ φαῦλον ἔχον χυμὸν 30  
ἢ φθαρτικὸν τῆς γεύσεως. δοκεῖ δ' εἶναι ἀρχὴ τὸ ποτὸν καὶ

γ. αἰσθ. τὸ δ. SUX Them., τὸ om. Soph. || 10. δὲ om. SUX, leg. Simpl. || 11. ὕλη E (Trend.), ὕλη E (Bek. Bus.), ὕλη etiam ceteri codd. et Them. 70, 33 et Simpl. et Philop. et ap. Philop. Alex., qui etiam ὑδατι pro ὕλη legi tradit || καὶ] καὶ S U V W X, καὶ etiam Them. || 12. εἶμεν 'solus E, sed ei in rasura positum, videtur subfuisse ἡμεν (Trend.), εἶμεν Bek. Torst. || 12. αἰσθανόμεθ' solus E Bek. Torst.; αἰσθανόμεθ' T et, ut videtur, Them. 70, 24, ἡμεν et ἡσθανόμεθ' leg. Philop. Soph. Trend. "essemus et sentiremus" vet. transl. || 17. αἰσθησιν χυμοῦ S U V, χυμοῦ αἰσθ. etiam Soph. || 18. ἀλλ... ὑγρότητα om. E, post ἄλμυρόν ponit T, vulgatam tuentur Them. Simpl. Soph. || 19. τηκτόν SUX Soph. || γλώσσης S U V || 20. de hoc loco ὥσπερ... 31. γεύσεως vid. Bon. stud. Arist. II, III, 43, quem in distinguendis singulis enunciationis membris, praeceunte Biehlio, secutus sum || 20. τε om. E W, leg. Them. Philop. Soph. || τοῦ ante ἀορ. om. S T U Wy, leg. Them. Philop. Soph. || 26. virgulam post ἀνήκουστος Bon. et Madvig, Advers. crit. I, p. 472, et iam Them. hunc locum ita interpretatus est. post τινὰ Bek.

reason why animals which breathe cannot smell in the water. For it is necessary for them to take in breath before smelling and this they cannot do in the water. Odour is included under that which is dry, as flavour under that which is moist, and the organ of smell is potentially dry also.

The object of taste is a species of tangible. And this is the **10**  
 reason why it is not perceived through a foreign body  
 as medium: for touch employs no such medium either.  
 The body, too, in which the flavour resides, the proper object of  
 taste, has the moist, which is something tangible, for its  
 has no external medium. matter or vehicle. Hence, even if we lived in water,  
 we should still perceive anything sweet thrown into the  
 water, but our perception would not have come through the **2**  
 medium, but by the admixture of sweetness with the fluid, as is  
 the case with what we drink. But it is not in this way, namely, by  
 admixture, that colour is perceived, nor yet by emanations.  
 Nothing, then, corresponds to the medium; but to colour, which is  
 the object of sight, corresponds the flavour, which is the object of  
 taste. But nothing produces perception of flavour in the  
 absence of moisture, but either actually or potentially the  
 producing cause must have liquid in it: salt, for instance,  
 for that is easily dissolved and acts as a dissolvent upon the tongue.

Again, sight is of the invisible as well as the visible (for dark- **3**  
 ness is invisible and this, too, sight discerns as well as light) and,  
 further, of that which is exceedingly bright, which is likewise in-  
 visible, though in a different way from darkness. Similarly hearing  
 has to do with noise and silence, the former being audible, the latter  
 inaudible, and, further, with loud noise, to which it is related as  
 vision is to brightness, a loud and a violent sound being in a manner  
 just as inaudible as a faint sound. The term invisible, be it noted,  
 is applied not only to that which it is wholly impossible to see,  
 which corresponds to other cases of the impossible, but also when  
 a thing has imperfectly or not at all its natural properties, answer-  
 ing to the footless and the kernel-less. So, too, taste has for object  
 not only that which can be tasted, but also the tasteless,  
 by which we mean that which has little flavour or hardly  
 any at all, or a flavour destructive of the taste. Now in flavour  
 this distinction is supposed to start with the drinkable and the

Forst. Trend. || 27. <μη ἔχον χρώμα> post δλωσ addendum censet Essen || 27. ὥσπερ...  
 28. ἀδύνατον in parenth. posuit Rodier || 28. ἀν E || 29. ἀπτόν S, ἀπλοῦν E, ἀπουν  
 Philop. Simpl. || τὸ ante ἀπύρ. om. ETU Simpl. || δέ ETUW Simpl., δη etiam  
 Them. 71, 7 et Soph. 94, 28 videntur legisse || 30. καὶ τοῦ ἀγ. SV Them., om. τοῦ  
 Simpl. || ἡ] καὶ V X.

ἀποτον· γεύσις γάρ τις ἀμφότερα· ἀλλὰ τὸ μὲν φαύλη  
 4 καὶ φθαρτικὴ τῆς γεύσεως, τὸ δὲ κατὰ φύσιν. ἔστι δὲ κοι-  
 νὸν ἀφῆς καὶ γεύσεως τὸ ποτόν. ἐπεὶ δ' ὑγρὸν τὸ γευστόν,  
 ἀνάγκη καὶ τὸ αἰσθητήριον αὐτοῦ μήτε ὑγρὸν εἶναι ἐντελε- 422b  
 χεῖα μήτε ἀδύνατον ὑγραίνεσθαι. πάσχει γάρ τι ἡ γεύ-  
 σις ὑπὸ τοῦ γευστοῦ, ἢ γευστόν. ἀναγκαῖον ἄρα ὑγρανθῆναι  
 τὸ δυνάμενον μὲν ὑγραίνεσθαι σωζόμενον, μὴ ὑγρὸν δέ, τὸ  
 γευστικὸν αἰσθητήριον. σημεῖον δὲ τὸ μήτε κατάξηρον οὔσαν 5  
 τὴν γλῶτταν αἰσθάνεσθαι μήτε λίαν ὑγράν· αὕτη γὰρ ἀφή  
 γίνεται τοῦ πρώτου ὑγροῦ, ὥσπερ ὅταν προγευματίσας τις  
 ἰσχυροῦ χυμοῦ γεύηται ἐτέρου· καὶ οἷον τοῖς κάμνουσι πικρὰ  
 πάντα φαίνεται διὰ τὸ τῇ γλώττῃ πλήρει τοιαύτης ὑγρό-  
 5 τητος αἰσθάνεσθαι. τὰ δ' εἶδη τῶν χυμῶν, ὥσπερ καὶ ἐπὶ 10  
 τῶν χρωμάτων, ἀπλᾶ μὲν τὰναντία, τὸ γλυκὺ καὶ τὸ  
 πικρόν, ἐχόμενα δὲ τοῦ μὲν τὸ λιπαρόν, τοῦ δὲ τὸ ἀλμυρόν·  
 μεταξὺ δὲ τούτων τό τε δριμὺ καὶ τὸ αὐστηρὸν καὶ στρυφνὸν  
 καὶ ὀξύ· σχεδὸν γὰρ αὗται δοκοῦσιν εἶναι διαφοραὶ χυμῶν.  
 ὥστε τὸ γευστικὸν ἔστι τὸ δυνάμει τοιοῦτον, γευστόν δὲ τὸ ποιη- 15  
 τικὸν ἐντελεχεῖα αὐτοῦ.

- 11 Περὶ δὲ τοῦ ἀπτοῦ καὶ περὶ ἀφῆς ὁ αὐτὸς λόγος· εἰ γὰρ ἡ  
 ἀφή μὴ μία ἔστιν αἰσθησις ἀλλὰ πλείους, ἀναγκαῖον καὶ τὰ  
 ἀπτὰ αἰσθητὰ πλείω εἶναι. ἔχει δ' ἀπορίαν πότερον πλείους  
 εἰσὶν ἢ μία, καὶ τί τὸ αἰσθητήριον τὸ τοῦ ἀπτικοῦ, πότερον 20  
 ἢ σὰρξ καὶ ἐν τοῖς ἄλλοις τὸ ἀνάλογον, ἢ οὐ, ἀλλὰ τοῦτο  
 μὲν ἔστι τὸ μεταξύ, τὸ δὲ πρῶτον αἰσθητήριον ἄλλο τί  
 2 ἔστιν ἐντός. πᾶσά τε γὰρ αἰσθησις μίᾳς ἐναντιώσεως εἶναι  
 δοκεῖ, οἷον ὄψις λευκοῦ καὶ μέλανος καὶ ἀκοὴ ὀξέος καὶ  
 βαρέος καὶ γεύσις πικροῦ καὶ γλυκέος· ἐν δὲ τῷ ἀπτῷ 25  
 πολλαὶ ἔνεισιν ἐναντιώσεις, θερμὸν ψυχρόν, ξηρὸν ὑγρόν,  
 σκληρὸν μαλακόν, καὶ τῶν ἄλλων ὅσα τοιαῦτα. ἔχει δὲ  
 τινα λύσιν πρὸς γε ταύτην τὴν ἀπορίαν, ὅτι καὶ ἐπὶ τῶν

32. ἀμφοτέρου conl. Trend. || 422 b, i. καὶ om. ST V X Them. || 4. μὲν om. S U V W X, leg. Philop. et, ut videtur, Them. 71, 34 || 6. γλῶσσαν T U V W || αὕτη] conl. αὐτοῦ Torst., tuentur αὕτη Philop. Simpl. Soph. || γὰρ ἡ ἀφή E Simpl., ἡ om. Philop. Soph. || 8. χυμοῦ om. E, leg. Them. Soph. || 9. τὴν γλῶτταν πλήρη T W y || 13. τὸ ante αὐστ. om. S V W || 16. post αὐτοῦ excidisse putat ὅλον αὐτό Torst., ac re vera in interpret. habent ὅλον αὐτό et Them. et Philop. || 17. καὶ περι] καὶ S U V X Soph., καὶ τῆς W et fort. Simpl., καὶ περὶ ἀφῆς etiam Philop. Torst. || 20. τὸ ante τοῦ om. S V X Simpl. || ἀπτικοῦ omnes codd. praeter W, qui ἀπτοῦ habet, ἀπτικοῦ etiam Simpl.

undrinkable. Both are tastes of a sort, but the latter is poor or destructive of the faculty of taste, while the former is naturally adapted to it. The drinkable is the common object of touch and 4  
 The of taste. But, since the object of taste is moist, the  
 organ. sense-organ which perceives it must be neither actually moist nor yet incapable of becoming moist. For taste is acted upon by the object of taste as such. The organ of taste, then, which needs to be moistened, must have the capacity of absorbing moisture without being dissolved, while at the same time it must not be actually moist. A proof of this is the fact that the tongue has no perception either when very dry or very moist. In the latter case the contact is with the moisture originally in the tongue, just as when a man first makes trial of a strong flavour and then tastes some other flavour; or as with the sick, to whom all things appear bitter because they perceive them with their tongue full of bitter moisture.

As with the colours, so with the species of flavour, there are, 5  
 Species of firstly, simple flavours, which are opposites, the sweet and  
 flavour. the bitter; next to these on one side the succulent, on the other the salt; and, thirdly, intermediate between these, the pungent, the rough, the astringent and the acid. These seem to be practically all the varieties of flavour. Consequently, while the faculty of taste has potentially the qualities just described, the object of taste converts the potentiality into actuality.

The same account is to be given of touch and the tangible. 11  
 Touch. If touch is not a single sense but includes more senses than one, there must be a plurality of tangible objects also. It is a question whether touch is several senses or only one. What, moreover, is the sense-organ for the faculty of touch? Is it the flesh or what is analogous to this in creatures that have not flesh? Or is flesh, on the contrary, the medium, while the primary sense-organ is something different, something internal? We may argue thus: 2  
 Is it a every sense seems to deal with a single pair of opposites, sight with white and black, hearing with high and low pitch, taste with bitter and sweet; but under the tangible are included several pairs of opposites, hot and cold, dry and moist, hard and soft and the like. A partial solution of this difficulty lies in the con-

Soph. et, ut videtur, Them. 73, 12, ἀπὸ τοῦ ἀπαικίου de coniect. scripsit Bek., quem secuti sunt Trend. Torst. || 21. ἡ om. S U V W, leg. Them. Simpl. Soph. || 23. τε om. X, huic τε respondet 25. δέ, cf. Bz. Oestr. Gymn. Zeitschr. 1867, p. 680 || 26. εἰς τὴν S T U V X.

ἄλλων αἰσθήσεών εἰσιν ἐναντιώσεις πλείους, οἷον ἐν φωνῇ οὐ μόνον ὀξύτης καὶ βαρύτης, ἀλλὰ καὶ μέγεθος καὶ μικρότης<sup>30</sup> καὶ λειότης καὶ τραχύτης φωνῆς καὶ τοιαυτῇ ἕτερα. εἰσὶ δὲ καὶ περὶ χρώμα διαφοραὶ τοιαῦται ἕτεραι. ἀλλὰ τί τὸ ἐν τῷ ὑποκείμενον, ὥσπερ ἀκοὴ ψόφος, οὕτω τῇ ἀφῇ, οὐκ ἔστιν ἐνδηλον.

- 3 πότερον δ' ἐστὶ τὸ αἰσθητήριον ἐντός, ἢ οὐ, ἀλλ' εὐ-  
θέως ἢ σὰρξ, οὐδὲν δοκεῖ σημεῖον εἶναι τὸ γίνεσθαι τὴν αἰ- 423a  
σθησιν ἅμα θιγγανομένων. καὶ γὰρ νῦν εἴ τις περὶ τὴν σάρ-  
κα περιτείνειεν οἷον ὑμένα ποιήσας, ὁμοίως τὴν αἰσθησιν εὐ-  
θέως ἀψάμενος ἐνσημαίνει· καίτοι δῆλον ὡς οὐκ ἔστιν ἐν τούτῳ  
4 τὸ αἰσθητήριον· εἰ δὲ καὶ συμφυεὲς γένοιτο, θάττον ἔτι δι-  
ικνοῖτ' ἂν ἡ αἰσθησις. διὸ τὸ τοιοῦτο μόριον τοῦ σώματος ἔοι-  
κεν οὕτως ἔχειν ὥσπερ ἂν εἰ κύκλῳ ἡμῖν περιεπεφύκει ὁ  
ἀήρ· ἐδοκοῦμεν γὰρ ἂν ἐνί τινι αἰσθάνεσθαι καὶ ψόφου καὶ  
χρώματος καὶ ὁσμῆς, καὶ μία τις αἰσθησις εἶναι ὅψις ἀκοὴ  
ὁσφρησις. νῦν δὲ διὰ τὸ διαρίσθαι δι' οὗ γίνονται αἱ κινήσεις,<sup>10</sup>  
φανερὰ τὰ εἰρημένα αἰσθητήρια ἕτερα ὄντα. ἐπὶ δὲ τῆς ἀφῆς  
τοῦτο νῦν ἄδηλον· ἐξ αἵματος μὲν γὰρ ἡ ὕδατος ἀδύνατον  
συστῆναι τὸ ἔμψυχον σῶμα· δεῖ γάρ τι στερεὸν εἶναι. λείπεται  
δὲ μεικτὸν ἐκ γῆς καὶ τούτων εἶναι, οἷον βούλεται <εἶναι> ἢ σὰρξ  
καὶ τὸ ἀνάλογον· ὥστε ἀναγκαῖον καὶ τὸ σῶμα εἶναι τὸ μεταξὺ τοῦ<sup>15</sup>  
ἄπτικου προσπεφυκός, δι' οὗ γίνονται αἱ αἰσθήσεις πλείους οὐ-  
5 σαι. δηλοῖ δ' ὅτι πλείους ἢ ἐπὶ τῆς γλώττης ἀφῆ· ἀπάντων  
γὰρ τῶν ἄπτων αἰσθάνεται κατὰ τὸ αὐτὸ μόριον καὶ χυμοῦ.  
εἰ μὲν οὖν καὶ ἡ ἄλλη σὰρξ ἡσθάνετο τοῦ χυμοῦ, ἐδόκει ἂν ἡ  
αὐτὴ καὶ μία εἶναι αἰσθησις ἢ γεῦσις καὶ ἡ ἀφῆ· νῦν δὲ<sup>20</sup>  
δύο διὰ τὸ μὴ ἀντιστρέφειν.

33. δῆλον S U V X, ἐν δῆλον E, ἐν δῆλον T, ἐνδηλον etiam Simpl. Philop. || 423 a, 1. post σὰρξ signum interrogationis Bek. Trend., virgulam Torst. || τῷ E || 2. νῦν om. S U V, leg. Them. || 4. ἀψάμενον P, ἀψαμένοις in interpret. Them., ἀψαμένοις vel ἀψαμένῳ coni. Trend., ἀψαμένου coni. Torst. || ἐνσημαίνει X, ἂν ἐνσημαίνει T || 6. τοιοῦτον S T U V W X, τοιοῦτο Philop. Them. (v.1. τοιοῦτον) || 9. ὁσμῆς E T W, ὁσμῆς Philop. || 10. κινήσεις καὶ αἱ αἰσθήσεις U, αἰσθήσεις γρ. S et Them. 73, 18, textum tuetur Soph. || 12. τοῦτο μὲν νῦν E T W, om. μὲν etiam Simpl. || γὰρ οὖν coni. Essen || 13. pro ἔμψυχον coni. μεταξὺ ὃν Sussemihl, Burs. Jahrb. IX, 351 || 14. δὴ V W Them. Bek. Trend. || post βούλεται excidisse εἶναι καὶ coni. Torst., εἶναι e Themistio et Sophonia recepit Biehle, nihil desiderandum censet Rodier || 15. ἀνάλογον εἰ γὰρ πᾶσα αἰσθησις διὰ τοῦ μεταξὺ, καὶ ἡ ἀφῆ Ald. Basil., quod additamentum e Themistio (cf. 73, 27) fluxisse recte iudicat iam Basil. in margine || ἀναγκαῖον καὶ ἀναγκαῖον εἶναι καὶ E, om. καὶ U Torst. || τὸ σῶμα εἶναι] εἶναι τὸ σῶμα U || τὸ ante μεταξύ T X y Them. Simpl. Torst.,



sideration that the other senses also apprehend more than one pair of opposites. Thus in vocal sound there is not only high and low pitch, but also loudness and faintness, smoothness and roughness, and so on. In regard to colour also there are other similar varieties. But what the one thing is which is subordinated to touch as sound is to hearing is not clear.

But is the organ of sense internal or is the flesh the immediate 3 organ? No inference can be drawn, seemingly, from the fact that the sensation occurs simultaneously with contact. For even under present conditions, if a sort of membrane were constructed and stretched over the flesh, this would immediately on contact transmit the sensation as before. And yet it is clear that the organ of sense is not in this membrane; although, 4 if by growth it became united to the flesh, the sensation would be transmitted even more quickly. Hence it appears that the part of the body in question, that is, the flesh, is related to us as the air would be if it were united to us all round by natural growth. We should then have thought we were perceiving sound, colour and smell by one and the same instrument: in fact, sight, hearing and smell would have seemed to us in a manner to constitute a single sense. But as it is, owing to the media, by which the various motions are transmitted, being separated from us, the difference of the organs of these three senses is manifest. But in regard to touch this point is at present obscure.

In fact, the animate body cannot consist of air or water singly, it must be something solid. The only alternative is that it should be a compound of earth and of these elements, as flesh and what is analogous to flesh profess to be. Consequently the body must be the naturally cohering medium for the faculty of touch, through which the plurality of sensations is communicated. That they are a plurality is made clear by touch in the 5 case of the tongue, for the tongue perceives all tangible objects, and that at the same part at which it perceives flavour. Now, if the rest of the flesh also had perception of flavour, taste and touch would have seemed to be one and the same sense: whereas they are really two, because their organs are not interchangeable.

quod probat etiam Steinhart, om. τὸ reliqui ante Biehlium omnes || 18. αἰσθηται STU || 19. καὶ om. S U, leg. etiam Them. Simpl.

6 ἀπορήσειε δ' ἂν τις, εἰ πᾶν σῶμα βάθος ἔχει, τοῦτο δ' ἐστὶ  
 τὸ τρίτον μέγεθος· ὦν δ' ἐστὶ δύο σωμάτων μεταξύ σῶμά τι,  
 οὐκ ἐνδέχεται ταῦτα ἀλλήλων ἄπτεσθαι· τὸ δ' ὑγρὸν οὐκ ἔστιν  
 ἄνευ σώματος, οὐδὲ τὸ διερόν, ἀλλ' ἀναγκαῖον ὕδωρ εἶναι ἢ ἔχειν 25  
 ὕδωρ· τὰ δὲ ἀπτόμενα ἀλλήλων ἐν τῷ ὕδατι, μὴ ξηρῶν τῶν ἄκρων  
 ὄντων, ἀναγκαῖον ὕδωρ ἔχειν μεταξύ, οὐ ἀνάπλεα τὰ ἔσχατα·  
 εἰ δὲ τοῦτ' ἀληθές, ἀδύνατον ἄψασθαι ἄλλο ἄλλου ἐν ὕδατι,  
 τὸν αὐτὸν δὲ τρόπον καὶ ἐν τῷ ἀέρι (ὁμοίως γὰρ ἔχει ὁ ἀήρ  
 πρὸς τὰ ἐν αὐτῷ καὶ τὸ ὕδωρ πρὸς τὰ ἐν τῷ ὕδατι, λαν- 30  
 θάνει δὲ μᾶλλον ἡμᾶς, ὥσπερ καὶ τὰ ἐν τῷ ὕδατι ζῶα,  
 7 εἰ διερόν διεροῦ ἄπτεται)· πότερον οὖν πάντων ὁμοίως 423b  
 ἐστὶν ἢ αἰσθησις, ἢ ἄλλων ἄλλως, καθάπερ νῦν δοκεῖ ἢ  
 μὲν γεύσις καὶ ἢ ἀφή τῷ ἄπτεσθαι, αἱ δ' ἄλλαι ἀποθεν.  
 τὸ δ' οὐκ ἔστιν, ἀλλὰ καὶ τὸ σκληρὸν καὶ τὸ μαλακὸν δι'  
 ἐτέρων αἰσθανόμεθα, ὥσπερ καὶ τὸ ψοφητικὸν καὶ τὸ ὄρατὸν 5  
 καὶ τὸ ὁσφραντόν· ἀλλὰ τὰ μὲν πόρρωθεν, τὰ δ' ἐγγύθεν. διὸ  
 λανθάνει· ἐπεὶ αἰσθανόμεθά γε πάντων διὰ τοῦ μέσου· ἀλλ'  
 ἐπὶ τούτων λανθάνει. καίτοι καθάπερ εἶπαμεν καὶ πρότερον,  
 καὶ εἰ δι' ὑμένοιο αἰσθανοίμεθα τῶν ἀπτῶν ἀπάντων λανθά-  
 νοντος ὅτι διείργει, ὁμοίως ἂν ἔχοιμεν ὥσπερ καὶ νῦν ἐν 10  
 τῷ ὕδατι καὶ ἐν τῷ ἀέρι· δοκοῦμεν γὰρ νῦν αὐτῶν ἄπτεσθαι  
 8 καὶ οὐδὲν εἶναι διὰ μέσου. ἀλλὰ διαφέρει τὸ ἀπτὸν τῶν ὄρα-  
 τῶν καὶ τῶν ψοφητικῶν, ὅτι ἐκείνων μὲν αἰσθανόμεθα τῷ  
 τὸ μεταξύ ποιεῖν τι ἡμᾶς, τῶν δὲ ἀπτῶν οὐχ ὑπὸ τοῦ με-  
 ταξὺ ἀλλ' ἅμα τῷ μεταξύ, ὥσπερ ὁ δι' ἀσπίδος πληγείς· 15  
 οὐ γὰρ ἢ ἀσπὶς πληγείσα ἐπάταξεν, ἀλλ' ἅμ' ἅμφω  
 9 συνέβη πληγῇναι. ὅλως δ' ἔοικεν ἢ σὰρξ καὶ ἢ γλῶττα, ὡς

22. ἀπορήσειε...423 b, 3. ἀποθεν. De hoc loco vid. Torst. et Bon., stud. Arist. II, III, 62, quem in interpungendis singulis enunciationis membris, praeunte Biehlio, secutus sum || 23. δύο om. S U V X, leg. Soph. || 24. αὐτὰ E W y, ταῦτα Them. Soph. || 25. ὕδατος S V X, leg. ὕδωρ Simpl. || 27. οἷ] ὦ S T U V X, οὐ Them. Soph. || 28. post ὕδατι punct. Bek. Trend. Torst., colon posuit Biehl || 30. τὸ om. T et E (Trend.), leg. Soph. || ἐν αὐτῷ τῷ ὕδ. E T W y, ἐν αὐτῷ ὕδ. Soph., reliqui et scripti et impressi ἐν τῷ ὕδ. || 31. ἡμᾶς ὁ ἀήρ pro ἡμᾶς, ὥσπερ coni. Rodier II, 328 || ante καὶ, omisso ὥσπερ, legisse videtur τὰ ἐν τῷ ἀέρι Philop. 428, 26, fortasse etiam Soph. 98, 5 || post ζῶα vulg. virg. sustulit Rodier || 423 b, 1. ἀπάντων S U V W || 2. ἄλλως; καθ. Torst., ἄλλως, καθ. Bek. Trend. Bon. || 3. μὲν γεύσις] μὲν γὰρ γεύσις W, γεύσις, omisso μὲν, P || ἀποθεν; τὸ Trend., ἀποθεν. τὸ Bek. Torst. Bon. || 5. ψοφητὸν S X, ἔχον ψόφον P || 6. τὸ S V X || τὸ S U V X, τὰ utroque loco Soph. τὰ δὲ διὰ τὸ λῖαν ἐγγὺς λανθάνει P || ἀλλὰ τὰ μὲν...7. λανθάνει interpolata esse censet Rodier II, 328 || post ἐγγύθεν

Here a question arises. All body has depth, this being the 6  
 third dimension, and, if between two bodies a third body is inter-  
 posed, the two cannot touch one another. Now that  
 which is fluid is not independent of body, nor is that  
 which is wet: if it is not itself water, it must contain  
 water. But when bodies touch one another in the water, since their  
 exterior surfaces are not dry, there must be water between them,  
 the water with which their extremities are flooded. If, then, all  
 this be true, no one thing can possibly touch another in the water,  
 nor yet in the air: for the air stands to the objects in the air  
 as water to the things in water, but this fact we are more apt  
 to overlook, just as aquatic animals fail to notice that the things  
 which touch one another in the water have wet surfaces. The 7  
 question then arises: is the mode of perception uniform for all  
 objects or does it differ for different objects? According to the  
 prevalent view, taste and touch operate by direct contact, while  
 the other senses operate at a distance. But this view is  
 incorrect. On the contrary, we perceive the hard and the  
 soft also mediately, just as much as we do the resonant, the visible,  
 the odorous. But the latter are perceived at a distance, the former  
 close at hand: and this is why the fact escapes us, since we really  
 perceive all objects through a medium, though in touch and taste  
 we fail to notice this. And yet, as we mentioned above, even if we  
 perceived all objects of touch through a membrane without being  
 aware of its interference, we should be just in the same position  
 as we are now with regard to objects in the water or in the air:  
 for, as it is, we suppose that we are touching the objects them-  
 selves and that there is no intervening medium. But there is 8  
 this difference between the tangible on the one hand and visible  
 and resonant things on the other: the latter we perceive because  
 the medium acts in a certain way upon us, while tangible objects  
 we perceive not by any action upon us of the medium, but con-  
 currently with it, like the man who is struck through his shield.  
 It is not that the shield was first struck and then passed on the  
 blow, but, as it happened, both were struck simultaneously. And, 9  
 generally, it would seem that the flesh and the tongue are related

colon Torst. || 7. post *λανθάνει* virgulam Bek. Trend., colon Torst. || verba 7. *ἐπελ...*  
 8. *λανθάνει* unc. incl. Essen || 8. *ἐπαμειν* solus E, reliqui codd. *ἐπομειν* excepto P, qui  
*ὥσπερ εἰρηγται πρότερον* habet || 9. *ἡσθανοίμεθα* E, *αἰσθανώμεθα* STUVX, *αἰσθανοίμεθα*  
 etiam Them. || 11. *ἐν* om. SVWY || *νῦν* om. S UVX Bek. Trend. Torst., leg. etiam  
 vet. transl. || 12. *ὁρατικῶν* ETY || 13. *τῶν* om. EPY Soph. || *ἐκεῖνα* ESTUVX,  
*ἐκεῖνων* P, etiam Soph. || *μὲν* om. P || 16. *ἀλλ' αὐμ' αὐμφω* e codd. solus E, etiam Them.  
 Sc ph. vet. transl. Torst., *αὐμ'* om. reliqui ante Torst. omnes || 17. *γλῶσσα* STUVXY.

ὁ ἀήρ καὶ τὸ ὕδωρ πρὸς τὴν ὄψιν καὶ τὴν ἀκοήν καὶ τὴν ὁσφρησιν ἔχουσιν, οὕτως ἔχειν πρὸς τὸ αἰσθητήριον ὥσπερ ἐκείνων ἕκαστον. αὐτοῦ δὲ τοῦ αἰσθητηρίου ἀπτομένου 20 οὐτ' ἐκεῖ οὐτ' ἐνταῦθα γένοιτ' ἂν αἰσθησις, οἷον εἴ τις σῶμα [τὸ] λευκὸν ἐπὶ τοῦ ὀμματος θείη τὸ ἔσχατον. ἥ καὶ δῆλον ὅτι ἐντὸς τὸ τοῦ ἀπτοῦ αἰσθητικόν. οὕτω γὰρ ἂν συμβαίνειν ὅπερ καὶ ἐπὶ τῶν ἄλλων· ἐπιτιθεμένων γὰρ ἐπὶ τὸ αἰσθητήριον οὐκ αἰσθάνεται, ἐπὶ δὲ τὴν σάρκα ἐπιτιθεμένων αἰσθά- 25 νεται· ὥστε τὸ μεταξὺ τοῦ ἀπτικοῦ ἢ σάρξ.

10 ἀπταὶ μὲν οὖν εἰσὶν αἱ διαφοραὶ τοῦ σώματος ἢ σῶμα· λέγω δὲ διαφορὰς αἱ τὰ στοιχεῖα διορίζουσι, θερμὸν ψυχρόν, ξηρὸν ὑγρόν, περὶ ὧν εἰρήκαμεν πρότερον ἐν τοῖς περὶ τῶν στοιχείων.

11 τὸ δὲ αἰσθητήριον αὐτῶν τὸ ἀπτικόν, καὶ ἐν ᾧ ἡ καλουμένη 30 ἀφή ὑπάρχει αἰσθησις πρῶτω, τὸ δυνάμει τοιοῦτόν ἐστι μόριον· τὸ γὰρ αἰσθάνεσθαι πάσχειν τι ἐστίν. ὥστε τὸ ποιοῦν οἷον αὐτὸ 424a ἐνεργεία τοιοῦτον ἐκείνο ποιεῖ δυνάμει ὄν. διὸ τοῦ ὁμοίως θερμοῦ καὶ ψυχροῦ ἢ σκληροῦ καὶ μαλακοῦ οὐκ αἰσθανόμεθα, ἀλλὰ τῶν ὑπερβολῶν, ὡς τῆς αἰσθήσεως οἷον μεσότητός τινος οὔσης τῆς ἐν τοῖς αἰσθητοῖς ἐναντιώσεως. καὶ διὰ τοῦτο κρίνει 5 τὰ αἰσθητά. τὸ γὰρ μέσον κριτικόν· γίνεται γὰρ πρὸς ἐκάτερον αὐτῶν θάτερον τῶν ἄκρων· καὶ δεῖ ὥσπερ τὸ μέλλον αἰσθήσεσθαι λευκοῦ καὶ μέλανος μηδέτερον αὐτῶν εἶναι ἐνεργεία, δυνάμει δ' ἄμφω (οὕτω δὲ καὶ ἐπὶ τῶν ἄλλων), καὶ ἐπὶ τῆς 12 ἀφῆς μήτε θερμὸν μήτε ψυχρόν. ἔτι δ' ὥσπερ ὁρατοῦ καὶ 10 ἀοράτου ἦν πως ἡ ὄψις, ὁμοίως δὲ καὶ αἱ λοιπαὶ τῶν ἀντικειμένων, οὕτω καὶ ἡ ἀφή τοῦ ἀπτοῦ καὶ ἀνάπτου· ἀναπτὸν δ' ἐστὶ τό τε μικρὰν ἔχον πάμπαν διαφορὰν τῶν ἀπτῶν, οἷον πέπονθεν ὁ ἀήρ, καὶ τῶν ἀπτῶν αἱ ὑπερβολαί, ὥσπερ τὰ φθαρτικά. καθ' ἐκάστην μὲν οὖν τῶν αἰσθήσεων εἴρηται 15 τύπῳ.

20. ἀπτομένων U V X || 21. τὸ ante σῶμα e priori editione suscepit Torst. || 22. τὸ ante λευκὸν om. S U V X, unc. incl. Biehl || ἡ W, om. S U V, ἡ etiam Simpl. || 23. αἰσθητήριον T W, αἰσθητικόν etiam Simpl. || 24. ὥσπερ S U V X || καὶ om. S T U V W X y || 27. ἀπτά T U V Philop. Soph., αἰται P, ἀπται etiam Simpl. 158, 23 sed αἰται ad hunc locum etiam in interpr. 164, 17. 18 || 28. αἰς S U V X et fort. Soph. 100, 28 || 29. περὶ τῶν στ. E T y Philop., τῶν om. Simpl. Soph. Bek. Trend. Torst. || 31. ὑπάρχει αἰσθησις πρῶτω E Simpl. 158, 25, ὑπάρχει αἰσθησις καὶ πρῶτω T W, αἰσθησις πρῶτως y, "in quo sensus vocatus tactus" vet. transl., αἰσθησις om. reliqui codd., etiam Them. Soph. Bek. Trend. Torst. || 424 a, 2. post ἐνεργεία vulg. virgulam sustuli || τὸ δυνάμει ὄν e prima editione scripsit Torst. || 2. ὁμοίως T U X, ὁμοίως etiam Them. Simpl. Soph. || 3. καὶ prius || ἡ

to the true sense-organ as are air and water to the organs of sight, hearing and smell respectively. But neither in the one case nor in the other would sensation follow on contact with the sense-organ; for instance, if a body that is white were placed on the outer surface of the eye: which shows that the instrument that apprehends the tangible is within. We should then get the same result as in the case of the other senses. What is placed on the sense-organ we do not perceive: what is placed on the flesh we do perceive: therefore flesh is the medium for the faculty of touch.

It is, then, the distinctive qualities of body as body which are **10** the objects of touch: I mean those qualities which determine the

**Tangible qualities.** elements, hot or cold, dry or moist, of which we have previously given an account in our discussion of the elements. And their sense-organ, the tactile organ, that is, in **11** which the sense called touch primarily resides, is the part which has potentially the qualities of the tangible object. For perceiving is a sort of suffering or being acted upon: so that when the object makes the organ in actuality like itself it does so because that organ is potentially like it. Hence it is that we do not perceive what

**Sense a mean.** is just as hot or cold, hard or soft, as we are, but only the excesses of these qualities: which implies that the sense is a kind of mean between the opposite extremes in the sensibles. This is why it passes judgment on the things of sense. For the mean is capable of judging, becoming to each extreme in turn its opposite. And, as that which is to perceive white and black must not be actually either, though potentially both, and similarly for the other senses also, so in the case of touch the organ must be neither hot nor cold. Further, sight is in a manner, **12**

**The in-tangible.** as we saw, of the invisible as well as the visible, and in the same way the remaining senses deal with opposites. So, too, touch is of the tangible and the intangible: where by intangible is meant, first, that which has the distinguishing quality of things tangible in quite a faint degree, as is the case with the air; and, secondly, tangibles which are in excess, such as those which are positively destructive. Each of the senses, then, has now been described in outline.

S U W Them. Soph. || η] καὶ V || καὶ] ἡ S U V Them. Soph. || 5. καὶ om. E, leg. Soph. || 6. αἰσθητήρια STUX, αἰσθητά etiam Philop. Soph. || 9. οὐτω...ἄλλων in parenth. Torst. || δη S U W Bek. Trend., om. X || ἐπὶ ante τῆς om. ST V X.

12 Καθόλου δὲ περὶ πάσης αἰσθήσεως δεῖ λαβεῖν ὅτι ἡ μὲν αἴσθησις ἐστὶ τὸ δεκτικὸν τῶν αἰσθητῶν εἰδῶν ἄνευ τῆς ὕλης, οἷον ὁ κηρὸς τοῦ δακτυλίου ἄνευ τοῦ σιδήρου καὶ τοῦ χρυσοῦ δέχεται τὸ σημεῖον, λαμβάνει δὲ τὸ χρυσοῦν ἢ τὸ 20 χαλκοῦν σημεῖον, ἀλλ' οὐχ ἢ χρυσὸς ἢ χαλκός· ὁμοίως δὲ καὶ ἡ αἴσθησις ἐκάστου ὑπὸ τοῦ ἔχοντος χρῶμα ἢ χυμὸν ἢ ψόφον πάσχει, ἀλλ' οὐχ ἢ ἕκαστον ἐκείνων λέγεται, ἀλλ' 2 ἢ τοιονδί, καὶ κατὰ τὸν λόγον. αἰσθητήριον δὲ πρῶτον ἐν ᾧ ἡ τοιαύτη δύναμις. ἐστὶ μὲν οὖν ταυτόν, τὸ δ' εἶναι ἔτε- 25 ρον· μέγεθος μὲν γὰρ ἂν τι εἴη τὸ αἰσθανόμενον· οὐ μὴν τό γε αἰσθητικῶς εἶναι οὐδ' ἡ αἴσθησις μέγεθός ἐστιν, ἀλλὰ λό- 3 γος τις καὶ δύναμις ἐκείνου. φανερόν δ' ἐκ τούτων καὶ διὰ τί ποτε τῶν αἰσθητῶν αἱ ὑπερβολαὶ φθείρουσι τὰ αἰσθητή- ρια· ἐὰν γὰρ ἢ ἰσχυροτέρα τοῦ αἰσθητηρίου ἢ κίνησις, λύε- 30 ται ὁ λόγος (τούτο δ' ἦν ἡ αἴσθησις), ὥσπερ καὶ ἡ συμ- 4 φωνία καὶ ὁ τόνος κροῦομένων σφόδρα τῶν χορδῶν· καὶ διὰ τί ποτε τὰ φυτὰ οὐκ αἰσθάνεται, ἔχοντά τι μόριον ψυχι- κὸν καὶ πάσχοντά τι ὑπὸ τῶν ἀπτῶν αὐτῶν· καὶ γὰρ ψύχε- ται καὶ θερμαίνεται· αἴτιον γὰρ τὸ μὴ ἔχειν μεσότητα, μηδὲ 424b τοιαύτην ἀρχὴν οἶαν τὰ εἶδη δέχεσθαι τῶν αἰσθητῶν, ἀλλὰ 5 πάσχειν μετὰ τῆς ὕλης. ἀπορήσειε δ' ἂν τις εἰ πάθοι ἂν τι ὑπ' ὁσμῆς τὸ ἀδύνατον ὁσφρανθῆναι, ἢ ὑπὸ χρώματος τὸ μὴ δυνάμενον ἰδεῖν· ὁμοίως δὲ καὶ ἐπὶ τῶν ἄλλων. εἰ δὲ 5 τὸ ὁσφραντὸν ὁσμῇ, εἴ τι ποιεῖ, τὴν ὁσφρησιν ἢ ὁσμὴν ποιεῖ· ὥστε τῶν ἀδυνάτων ὁσφρανθῆναι οὐθὲν οἶόν τε πάσχειν ὑπ' ὁδμῆς· ὁ δ' αὐτὸς λόγος καὶ ἐπὶ τῶν ἄλλων· οὐδὲ τῶν δυ- νατῶν, ἀλλ' ἢ αἰσθητικὸν ἕκαστον. ἅμα δὲ δῆλον καὶ οὕτως. οὔτε γὰρ φῶς καὶ σκότος οὔτε ψόφος οὔτε ὁσμὴ οὐδὲν ποιεῖ 10 τὰ σώματα, ἀλλ' ἐν οἷς ἐστίν, οἷον ἀήρ ὁ μετὰ βροντῆς 6 δίστησι τὸ ξύλον. ἀλλὰ τὰ ἀπτά καὶ οἱ χυμοὶ ποιοῦσιν· εἰ

18. εἰδῶν om. S UX Soph. Torst., leg. Them. et sine dubio Simpl. Philop. ||  
 19. ὁ om. E Ty, leg. Them. Philop. Simpl. Soph. || 23. ἐκείνων] ἐκείνων conī.  
 Essen || 24. τὸν om. E (Trend.), τοιονδί κατὰ λόγον Soph. || 25. ταυτό Ty Torst.,  
 ταῦτά SX, ταυτόν Them. Philop. Simpl. || 26. τι εἴη] ἦν X || 28. ἐκείνο E, ἐκείνου  
 etiam Them. Simpl. Soph. || 31. ἦν om. E TWy, leg. Them. Soph. || τούτο...αἰσθησις  
 in parenth. Torst. || 34. τι om. S UX Them. || ἀπτῶν αὐτῶν· καὶ E TW, αὐτῶν om.  
 ceteri codd. Them. Soph. Bek. Trend. Torst. Biehl in ed. pr. || 424 b, 2. δέχεσθαι τὰ  
 εἶδη SVX, textum tuetur Them. || 4. τι om. E TWy Torst., leg. etiam Them. || ὁδμῆς  
 ET || 6. ὁδμή E || virgulam post ποιεῖ omissam post ὁσφρησιν ponit Bek., correxit

In regard to all sense generally we must understand that sense **12**

**What sense is.** is that which is receptive of sensible forms apart from their matter, as wax receives the imprint of the signet-ring apart from the iron or gold of which it is made: it **Illustration: seal upon wax.** takes the imprint which is of gold or bronze, but not *quod* gold or bronze. And similarly sense as relative to each sensible is acted upon by that which possesses colour, flavour or sound, not in so far as each of those sensibles is called a particular thing, but in so far as it possesses a particular quality and in respect of its

**Faculty and organ.** character or form. The primary sense-organ is that in **2** which such a power resides, the power to receive sensible forms. Thus the organ is one and the same with the power, but logically distinct from it. For that which perceives must be an extended magnitude. Sensitivity, however, is not an extended magnitude, nor is the sense: they are rather a certain character or power of the organ. From this it is evident why excesses in the **3** sensible objects destroy the sense-organs. For if the motion is too violent for the sense-organ, the character or form (and this, as we saw, constitutes the sense) is annulled, just as the harmony and the pitch of the lyre suffer by too violent jangling of the strings. It is **4**

**Why plants have no sensation.** evident, again, why plants have no sensation, although they have one part of soul and are in some degree affected by the things themselves which are tangible: for example, they become cold and hot. The reason is that they have in them no mean, no principle capable of receiving the forms of sensible objects without their matter, but on the contrary, when they are acted upon, the matter acts upon them as well. It might **5**

**Can the sensible affect things without sensation?** be asked whether what is unable to smell would be in any way acted upon by an odour, or that which is incapable of seeing by a colour, and so for the other sensibles. But, if the object of smell is odour, the effect it produces, if it produces an effect at all, is smelling. Therefore none of the things that are unable to smell can be acted upon by odour, and the same is true of the other senses: nor can things be acted upon when they have the power of sensation, except as they individually possess the particular sense required. This may also be shown as follows. Light and darkness do not act upon bodies at all; neither does sound nor odour: it is the things which possess them that act. Thus it is the air accompanying the thunderbolt which rives the timber. But, it may be said, things tangible and **6**

Trend., quem secutus est Torst. ||  $\eta$  U W, om. S V X ||  $\delta\delta\mu\eta$  E || 7.  $\delta\pi'$   $\delta\delta\mu\eta\varsigma$  om. S U X || 9.  $\acute{\epsilon}\kappa\acute{\alpha}\sigma\tau\omicron\nu$  pro  $\acute{\epsilon}\kappa\alpha\sigma\tau\omicron\nu$  fort. legendum esse censet Rodier II, 336 || 11.  $\delta$   $\acute{\alpha}\eta\rho$  S,  $\delta$   $\acute{\alpha}\eta\rho$   $\delta$  U W X,  $\acute{\alpha}\eta\rho$  V.

γὰρ μή, ὑπὸ τίνος ἂν πάσχοι τὰ ἄψυχα καὶ ἀλλοιοῖτο;  
 ἄρ' οὖν κακείνα ἐμποιεῖ; ἢ οὐ πᾶν σῶμα παθητικὸν ὑπ' ὁσμῆς  
 καὶ ψόφου· καὶ τὰ πάσχοντα ἀόριστα, καὶ οὐ μένει, οἶον <sup>15</sup>  
 ἀήρ· ὅξει γὰρ ὥσπερ παθὼν τι. τί οὖν ἐστὶ τὸ ὁσμᾶσθαι  
 παρὰ τὸ πάσχειν τι; ἢ τὸ μὲν ὁσμᾶσθαι καὶ αἰσθάνεσθαι, ὃ  
 δ' ἀήρ παθὼν ταχέως αἰσθητὸς γίνεται.

14. ἐμποιεῖ ETW y Biehl, ἐμπαιήσει U, ποιεῖ Philop. in lemmate 443, 9, ποιήσει  
 reliqui ante Biehlum omnes || post ἐμποιεῖ interrogationis punctum om. Biehl in ed. alt.  
 Rodier || ὁσμῆς ET V || 16. et 17. τι om. S U X || 17. καὶ ante αἰσθάνεσθαι ex solo E  
 (Bus.) addidit Torst., καὶ om. Philop.



flavours do so act: else by what agency are inanimate things acted upon or changed? Shall we, then, conclude that the objects of the other senses likewise act directly? Is it not rather the case that not all body can be affected by smell and sound, and that the bodies which are so affected are indeterminate and shifting; for example, air? For odour in the air implies that the air has been acted upon in some way. What then is smelling, besides a sort of suffering or being acted upon? Or shall we say that the act of smelling implies sense-perception, whereas the air, after it has been acted upon, so far from perceiving, at once becomes itself perceptible to sense?

## ΠΕΡΙ ΨΥΧΗΣ Γ.

- 1 Ὅτι δ' οὐκ ἔστιν αἰσθησις ἑτέρα παρὰ τὰς πέντε (λέγω 22 δὲ ταύτας ὄψιν, ἀκοήν, ὄσφρησιν, γεῦσιν, ἀφήν), ἐκ τούτων πιστεύσειεν ἂν τις. εἰ γὰρ παντός, οὗ ἔστιν αἰσθησις ἀφή, καὶ νῦν αἰσθησιν ἔχομεν (πάντα γὰρ τὰ τοῦ ἀπτοῦ ἢ ἀπτὸν πάθη 25 τῇ ἀφῇ ἡμῖν αἰσθητά ἐστιν), ἀνάγκη τ', εἴπερ ἐκλείπει τις αἰσθησις, καὶ αἰσθητήριόν τι ἡμῖν ἐκλείπειν· καὶ ὅσων μὲν αὐτῶν ἀπτόμενοι αἰσθανόμεθα, τῇ ἀφῇ αἰσθητά ἐστιν, ἣν τυγχάνομεν ἔχοντες, ὅσα δὲ διὰ τῶν μεταξὺ καὶ μὴ αὐτῶν ἀπτόμενοι, τοῖς ἀπλοῖς, λέγω δ' οἶον ἀέρι καὶ ὕδατι· 30
- 2 ἔχει δ' οὕτως, ὥστ' εἰ μὲν δι' ἑνὸς πλείω αἰσθητὰ ἕτερα ὄντα ἀλλήλων τῷ γένει, ἀνάγκη τὸν ἔχοντα τὸ τοιοῦτον αἰσθητήριον ἀμφοῖν αἰσθητικὸν εἶναι (οἶον εἰ ἐξ ἀέρος ἐστὶ τὸ αἰσθητήριον, καὶ ἔστιν ὁ ἀῆρ καὶ ψόφου καὶ χροάς), εἰ δὲ πλείω τοῦ αὐτοῦ, οἶον χροάς καὶ ἀῆρ καὶ ὕδωρ (ἄμφω γὰρ δια- 425a φανῇ), καὶ ὁ τὸ ἕτερον αὐτῶν ἔχων μόνον αἰσθησεται τοῦ δι' ἀμφοῖν· τῶν δὲ ἀπλῶν ἐκ δύο τούτων αἰσθητήρια μόνον ἐστίν, 3 ἐξ ἀέρος καὶ ὕδατος (ἡ μὲν γὰρ κόρη ὕδατος, ἡ δ' ἀκοὴ ἀέρος, ἡ δ' ὄσφρησις θατέρου τούτων), τὸ δὲ πῦρ ἢ οὐθενὸς ἢ 5 κοινὸν πάντων (οὐθέν γὰρ ἄνευ θερμότητος αἰσθητικόν), γῇ δὲ ἢ οὐθενός, ἢ ἐν τῇ ἀφῇ μάλιστα μέμεικται ἰδίως· διὸ λείπειτ' 4 ἂν μηθὲν εἶναι αἰσθητήριον ἔξω ὕδατος καὶ ἀέρος· ταῦτα δὲ

22. Hinc etiam cod. L || 23. τούτων EW Soph., τῶνδε δῆλον SX, τῶνδε Bek. Trend. Torst. Biehl in ed. pr., etiam Them. || 24. huius enunciationis εἰ γὰρ... apodosin incipit ab ὥστε 425 a, 11. Torst., ab a, 9. πᾶσαι ἀρα Bon., quod iam Simpl. fecerat, in interpungendis singulis comprehensionis membris, praeunte Biehllo, secutus sum Bon. || 25. ἔχομεν αἰσθησιν STUW, vulgatam tuentur Alex., ἀπ. καὶ λύσ. 89, 27 et Simpl. || 27. τι om. L, post ἡμῖν ponit W, αἰσθητήριόν τι etiam Alex. et Simpl. || ἐκλείπειν pr. E (Bek.) nunc ἐκλείπειν (Trend.), ἐκλείπειν etiam Alex. 90, 15 Them. Simpl. || 28. αὐτοὶ TWy Alex. 89, 30 et 90, 21, αὐτῶν etiam Simpl. 178, 29. 187, 21 et Soph. || 30. ἀπλοῖς διαστήμασι λ. TW et margo U, ἀπλοῖς ἀποστήμασι Simpl., vulgatam tuentur Alex. 89, 32. 90, 23 Philop. Soph. || 32. ἀλλήλων ὄντα τῷ γένει STUVWY, textum receptum tuentur Alex. 90, 35 et Simpl. || τὸ om. TWy Simpl.,

## DE ANIMA. BOOK III.

That there is no other sense distinct from the five, by which 1  
No sixth sense. I mean sight, hearing, smell, taste, touch, anyone may convince himself on the following grounds. Let us assume that, as a matter of fact, we have sensation of every sensible object for which touch is the appropriate sense, all qualities of the tangible, as such, being perceptible to us through touch. Let us further assume that, when any sense is lacking to us, an organ of sense must also be lacking; and further, that whatever we perceive by actual contact is perceptible by touch, a sense which we do possess, while whatever we perceive mediately and not by actual contact is perceptible by means of the elements, namely, air and water. And here are implied two cases. Suppose, 2  
first, we have perception by one and the same medium of two several things, different in kind from one another, then whoever possesses the appropriate sense-organ must be percipient of both: as, for example, if the sense-organ consists of air and air is also the medium of both sound and colour. Next suppose several media to transmit the same object, as both air and water transmit colour, both being transparent, then he who possesses one of these alone will perceive whatever is perceptible through both media. Now, of the elements, air and water are the only 3  
two of which sense-organs are composed. For the pupil of the eye is of water, and the ear is of air, and the organ of smell is of one or the other, while fire, if present anywhere, enters into all, since nothing can be sentient without warmth. Earth, again, belongs to none of the sense-organs, or, at most, is a constituent peculiar to touch. It follows, then, that outside water and air there is no sense-organ. Now sense-organs composed of air and water 4

leg. etiam Alex. 90, 36 || 425 a, 2. τοῦ δι' τοῦ L, om. S U V X et pr. E Philop. 452, 21 Bek., τοῦ δι' T W y Simpl. vet. transl. Trend. Torst. || 6. γῆ δὲ] ἡ δὲ γῆ S U W, γῆ δὲ etiam Them. Philop. || 7. ἡ prius om. pr. E (Trend.) W, leg. Simpl. Philop. 453, 1 Soph. 106, 39, ἡ οὐθενὸς ἡ om. S U V, unc. incl. Essen || ἰδίως om. L U V X y, leg. Simpl. || διὸ in rasura E<sub>2</sub> (Bhl.), om. L S U V X || λιποῖτ' E<sub>1</sub>, λελποῖτ' E<sub>2</sub> (Bhl.).

καὶ νῦν ἔχουσιν ἓνια ζῶα· πᾶσαι ἄρα αἱ αἰσθήσεις ἔχονται ὑπὸ τῶν μὴ ἀτελῶν μηδὲ πεπηρωμένων· φαίνεται γὰρ καὶ 10 ἡ ἀσπάλαξ ὑπὸ τὸ δέρμα ἔχουσα ὀφθαλμούς· ὥστ' εἰ μὴ τι ἕτερόν ἐστι σῶμα, καὶ πάθος ὃ μνηνός ἐστι τῶν ἐνταῦθα σωματίων, οὐδεμία ἂν ἐκλείποι αἰσθησις.

- 5 ἀλλὰ μὴν οὐδὲ τῶν κοινῶν οἷον τ' εἶναι αἰσθητήριόν τι ἴδιον, ὧν ἐκάστη αἰσθήσει αἰσθανόμεθα κατὰ συμβεβηκός, οἷον 15 κινήσεως, στάσεως, σχήματος, μεγέθους, ἀριθμοῦ, ἑνός· ταῦτα γὰρ πάντα κινήσει αἰσθανόμεθα, οἷον μέγεθος κινήσει· ὥστε καὶ σχῆμα· μέγεθος γάρ τι τὸ σχῆμα· τὸ δ' ἡρεμοῦν τῷ μὴ κινεῖσθαι· ὃ δ' ἀριθμὸς τῇ ἀποφάσει τοῦ συνεχοῦς, καὶ τοῖς ἰδίοις· ἐκάστη γὰρ ἐν αἰσθάνεται αἰσθησις. ὥστε δῆλον ὅτι ἀδύνατον 20 ὁτονοῦν ἰδίαν αἰσθησιν εἶναι τούτων, οἷον κινήσεως· οὕτω 6 γὰρ ἔσται ὥσπερ νῦν τῇ ὄψει τὸ γλυκὺ αἰσθανόμεθα. τοῦτο δ' ὅτι ἀμφοῖν ἔχοντες τυγχάνομεν αἰσθησιν, ἥ καὶ ὅταν συμπίσωσιν ἅμα γνωρίζομεν· εἰ δὲ μὴ, οὐδαμῶς ἂν ἀλλ' ἢ κατὰ συμβεβηκός ἦσθαι αἰσθανόμεθα, οἷον τὸν Κλέωνος υἱὸν οὐχ ὅτι 25 Κλέωνος υἱός, ἀλλ' ὅτι λευκός· τούτῳ δὲ συμβέβηκεν υἱῷ 7 Κλέωνος εἶναι. τῶν δὲ κοινῶν ἤδη ἔχομεν αἰσθησιν κοινήν, οὐ κατὰ συμβεβηκός· οὐκ ἄρ' ἐστὶν ἰδία· οὐδαμῶς γὰρ ἂν ἦσθαι αἰσθανόμεθα ἀλλ' ἢ οὕτως ὥσπερ εἴρηται τὸν Κλέωνος υἱὸν

11. σπάλαξ ES Bek., πάλαξ y, ἀσπάλαξ Them. Simpl. Philop. Soph. Trend. Torst. || τοὺς ὀφθαλμούς T U W y, τοὺς om. etiam Them. Philop. Soph. || 13. μίαν λίποι E, μία ἂν ἐκλείποι Ly Simpl., μία ἂν λείποιο T, μία ἂν ἐκλείποι E<sub>2</sub> S Alex. 90, 1 Them. Torst., μία ἂν ἐκλείποι reliqui ante Torst. omnes || 14. ἀλλὰ...b, 3. εἶναι. Totum hunc locum transponendo et emendando restituere voluit Susemihl, Burs. Jahresber. XXX, 42, aliter vero Essen II, 79 sqq., III, 14 || 15. ὧν καὶ ἐκάστη E Torst., καὶ om. ceteri codd. et Simpl. 183, 1 Philop. 457, 19 || οὐ a Torst. coni. et a Neuhaeusero, Ar. Lehre, p. 36, probatum in textum recepti Biehl, quamquam omiserunt omnes codd. et Them. Philop. Simpl., "non secundum accidens" vet. transl., οὐ non necessarium esse iudicant Zeller, Gesch. d. Phil. d. Gr. II, 2, p. 543 Brentano, l. 1. 82 Kampe, d. Erkenntnistheorie des Arist. 104 Rodier || 15. οἷον...19. συνεχοῦς in parenthesi ponenda et ante 19. καὶ τοῖς ἰδίοις lacunam esse censet Susemihl || 16. post ἀριθμοῦ virgulam posuit Torst., iam Philop. hunc locum ita interpretatus est 457, 24 || ἑνός om. V || 17. κινήσει prius] κοινῇ e Simpl. scripsit Torst., sed et Simpl. 183, 4. 30 habet κινήσει (quod etiam 184, 7 scripsit Hayduck), κινήσει etiam Them. et Soph., probat Neuhaeuser, p. 32, τῇ κινήσει Prisc. L. 21, 17, addendum ἄλλη ante κινήσει censet Essen II, 79 || post οἷον lacunam esse eamque sic explendam putat Torst.: κίνησιν· τὸ δὲ, vulgatam leg. Simpl. || 18. μεγέθους coni. Torst., μέγεθος etiam Philop. Soph., defendit Freudenthal, Rhein. Mus. 1869, p. 396 || τι καὶ τὸ L T W, καὶ om. etiam Philop. Soph. || 21. οὕτω...24. γνωρίζομεν et 27. τῶν δὲ...28. ἰδία posterioris, sed 24. εἰ δὲ...29. εἴρηται prioris recensionis esse iudicat Torst., quod refellit Neuhaeuser, p. 32 || 23. καὶ om. praeter E omnes codd. || 24. ἅμα γνωρίζομεν E Simpl. Torst., ἀναγνωρίζομεν T Bek. Trend., γνωρίζομεν reliqui ante Torst. omnes, etiam Philop. ||

certain animals do, in fact, possess. We may infer, then, that all the senses are possessed by those animals which are fully developed and are not crippled: even the mole is found to have eyes beneath its skin. And thus, unless there exists some unknown body or some property different from any possessed by any of the bodies within our experience, there can be no sixth sense which we lack.

Nor, again, can there be any special sense-organ for the common 5  
 Common  
 sensibles.      sensibles, which we perceive incidentally by every sense ;  
                          for example, motion, rest, figure, magnitude, number,  
 unity. For all of these we perceive by motion. Thus it is by  
 motion that we perceive magnitude, and consequently figure, figure  
 being one variety of magnitude; while that which is at rest we  
 perceive by the fact that it is not moved. Number we perceive  
 by the negation of continuity and by the special sense-organs  
 also: for each sensation has a single object. Clearly, then, it is  
 impossible that there should be a special sense for any one of these ;  
 for example, motion: for in that case we should perceive them in  
 the same way as we now perceive sweetness by sight (and this we 6  
 do because we have a sense which perceives both, and by this  
 we actually apprehend the two simultaneously when they occur  
 in conjunction). Otherwise we should never have more than an  
 incidental perception of them; as of Cleon's son we perceive not  
 that he is Cleon's son, but that he is a white object, and the fact  
 of his being Cleon's son is accessory to the whiteness. But of the 7  
 common sensibles we have already a common perception, which  
 is direct and not indirect, so that there cannot be a special sense  
 for them. For, if there were, we should never perceive them other-  
 wise than in the way in which we said we saw Cleon's son.

25. αἰσθανομένα L, αἰσθανόμεθα E T U V W y Philop. || 26. κλέωνος γὰρ υἱός S T V W ||  
 τοῦτο L V X et, ut videtur, pr. E (Rr.) || 27. τῶν δὲ...30. ὁρᾶν post b, 3. εἶναι trans-  
 ponenda censet Dembowski, Quaest. Ar. duae, pp. 85—91, probat Susemihl || 27. ἔχομεν  
 ἤδη αἰσθησιν L T U W, ἔχομεν αἰσθησιν ἤδη S V X || 28. οὐ κατὰ...30. ὁρᾶν unc. incl.  
 Essen III, 15 || 28. οὐκ ἄρ' οὐ γὰρ coni. Essen II, 81 || οὐδαμῶς...30. ὁρᾶν, quae  
 etiam Trend. suspecta sunt, ut prorsus hic inepta delenda censet Steinhart, cui assentitur  
 Susemihl || 28. γὰρ ἄρ' coni. Essen I. l. || 29. ἢ om. E L T V, leg. Simpl. Philop. ||  
 τὸν...ὁρᾶν unc. inclusit Torst., quod probant etiam Neuhaeuser, p. 34 et Kampe et etiam  
 dubitanter Dembowski, p. 89: sed v. p. 15.

ἡμᾶς ὁρᾶν. τὰ δ' ἀλλήλων ἴδια κατὰ συμβεβηκὸς αἰσθά- 30  
 νονται αἱ αἰσθήσεις, οὐχ ἥ αὐταί, ἀλλ' ἥ μία, ὅταν  
 ἅμα γένηται ἡ αἰσθησις ἐπὶ τοῦ αὐτοῦ, οἷον χολήν ὅτι πι- 425b  
 κρὰ καὶ ξανθή· οὐ γὰρ δὴ ἐτέρας γε τὸ εἰπεῖν ὅτι ἄμφω  
 ἐν· διὸ καὶ ἀπατᾶται, καὶ ἐὰν ἥ ξανθόν, χολήν οἶεται εἶ-  
 8 ναι. ζητήσῃς δ' ἂν τις τίνος ἔνεκα πλείους ἔχομεν αἰσθήσεις,  
 ἀλλ' οὐ μίαν μόνην. ἥ ὅπως ἦττον λαμβάνη τὰ ἀκολουθοῦντα 5  
 καὶ κοινά, οἷον κίνησις καὶ μέγεθος καὶ ἀριθμός· εἰ γὰρ  
 ἦν ἡ ὄψις μόνη, καὶ αὕτη λευκοῦ, ἐλάνθανεν ἂν μᾶλλον  
 κἂν ἐδόκει ταῦτά εἶναι πάντα διὰ τὸ ἀκολουθεῖν ἀλλήλοις  
 ἅμα χρῶμα καὶ μέγεθος. νῦν δ' ἐπεὶ καὶ ἐν ἐτέρῳ αἰ-  
 σθητῷ τὰ κοινὰ ὑπάρχει, δηλὸν ποιεῖ ὅτι ἄλλο τι ἕκαστον 10  
 αὐτῶν.

2 Ἐπεὶ δ' αἰσθανόμεθα ὅτι ὁρῶμεν καὶ ἀκούομεν, ἀνάγκη  
 ἢ τῇ ὄψει αἰσθάνεσθαι ὅτι ὁρᾷ, ἢ ἐτέρα. ἀλλ' ἡ αὕτη ἐστὶ  
 τῆς ὄψεως καὶ τοῦ ὑποκειμένου χρώματος. ὥστε ἡ δύο τοῦ  
 αὐτοῦ ἔσονται ἡ αὕτη αὐτῆς. ἔτι δ' εἰ καὶ ἐτέρα εἴη ἡ τῆς 15  
 ὄψεως αἰσθησις, ἡ εἰς ἄπειρον εἰσιν ἡ αὕτη τις ἐστὶ αὐτῆς.  
 2 ὥστ' ἐπὶ τῆς πρώτης τοῦτο ποιητέον. ἔχει δ' ἀπορίαν· εἰ γὰρ  
 τὸ τῇ ὄψει αἰσθάνεσθαί ἐστιν ὁρᾶν, ὁρᾶται δὲ χρῶμα ἢ τὸ  
 ἔχον, εἰ ὄψεται τις τὸ ὁρῶν, καὶ χρῶμα ἔξει τὸ ὁρῶν πρῶ-  
 3 τον. φανερόν τοίνυν ὅτι οὐχ ἐν τῇ ὄψει αἰσθάνεσθαι· καὶ 20  
 γὰρ ὅταν μὴ ὁρῶμεν, τῇ ὄψει κρίνομεν καὶ τὸ σκότος καὶ  
 τὸ φῶς, ἀλλ' οὐχ ὡσαύτως. ἔτι δὲ καὶ τὸ ὁρῶν ἐστὶν ὡς κε-  
 χρωμάτισται· τὸ γὰρ αἰσθητήριον δεκτικὸν τοῦ αἰσθητοῦ ἄνευ

30. οὐ ante κατὰ συμβεβηκὸς addendum esse censet Essen || 31. ἡ αὐταί TVVW  
 Simpl. 186, 5 Torst. Brentano, p. 97 Dembowski, al αὐταί EL, ἡ αὐταί SUY Bek.  
 Trend., ἡ αὐταί, ut videtur, Philop. 461, 5 sq., ἡ αὐται X Soph. 107, 29 et v. 1.  
 Philop., cf. Prisc. 22, 4 οὐχ ἡ μεμέρισται ἀλλ' ἡ συνήπται τῇ μιᾷ || 425 b, 1. γένηται  
 om. SUV || χολήν ὅτι] ὅτι χολή STUVWXY, χολήν ὅτι E, sed v. eras. (Trend.  
 Bhl.), χολή ὅτι Biehl in ed. alt. Rodier, οἷον χολῆς ὅτι Simpl. 186, 12 || 2. ἄμφω ἐν]  
 ἐν ἄμφω conl. Susemihl || 3. καὶ ἐὰν] διὸ καὶ ἐὰν E, καὶ ἐὰν omisso διὸ etiam Simpl. ||  
 4. πλείους TW Philop., πλείους Simpl. Soph. || 5. μόνον SUVX, μόνην etiam Simpl. ||  
 ἦττον] μὴ TVWXY, ἡ S, ἦττον etiam Simpl. Soph. || 7. ἡ om. STUVWX ||  
 μόνον L, om. pr. E || αὕτη conl. H. Jackson, αὕτη vulg., καὶ αὕτη λευκοῦ unc. incl.  
 Torst., leg. Philop. Simpl. et, ut videtur, Soph. 108, 25 || ἂν] κἂν E, sed κ in rasura  
 (Trend.), ἂν etiam Simpl. Soph. || 8. κἂν] καὶ Ey Soph. Bek. Trend., κἂν reliqui  
 et corr. E<sub>2</sub> (Bhl.) || ταῦτόν TX Simpl., ταῦτό WY Bek. Trend. Torst., τοῦτο SU,  
 ταῦτά E (Bhl.) LV Soph. || πάντα] πάντως conl. Essen II, p. 82, probat Rodier II,  
 364 || 9. pro ἅμα conl. del Torst., leg. ἅμα Simpl. Soph. || 12. ἐπεὶ δ'] ἐπειδὴ δὲ Them.,  
 ἐπειδὴ γὰρ Philop. || 13. ἡ τῇ ὄψει] ἦτοι ὄψει Alex., απ. καὶ λύσ. 91, 26 || ὅτι] εἰ τι

But the various senses incidentally perceive each other's proper objects, not as so many separate senses, but as forming a single sense, when there is concurrent perception relating to the same object; as, for instance, when we perceive that gall is bitter and yellow. For it is certainly not the part of any other sense to declare that both objects are one and the same. Hence you are sometimes deceived and, on observing something yellow, fancy it to be gall.

But, it might be asked, why have we several senses, instead of 8 only one? I answer, it is in order that we may not be so likely to overlook the common attributes, such as motion, magnitude, number, which accompany the special sensibles. For, if sight had been our only sense and whiteness its object, we should have been more apt to overlook the common sensibles and to confuse all sensibles, because colour and magnitude, for instance, must always go together. As it is, the fact that the common attributes are found in the object of another sense also shows that they are severally distinct.

Inasmuch as we perceive that we see and hear, it must either 2 be by sight or by some other sense that the percipient perceives that he sees. But, it may be urged, the same sense which perceives sight will also perceive the colour which is the object of sight. So that either there will be two senses to perceive the same thing or the one sense, sight, will perceive itself. Further, if the sense perceiving sight were really a distinct sense, either the series would go on to infinity or some one of the series of senses would perceive itself. Therefore it will be better to admit this of the first in the series. Here, however, there is a 2 difficulty. Assuming that to perceive by sight is to see and that it is colour or that which possesses colour which is seen, it may be argued that, if you are to see that which sees, that which in the first instance sees, the primary visual organ, will actually have colour. Clearly, then, to perceive by sight does not 3 always mean one and the same thing. For, even when we do not see, it is nevertheless by sight that we discern both darkness and light, though not in the same manner. Further, that which sees is in a manner coloured. For the sense-organ is in every case

Alex. 1. 1. || 15. *καὶ εἰ* E, om. *καὶ γ* || ἡ ante τῆς ex solo E recepit Torst. || 16. ἀνείων L U W X, πρὸειων in interpret. Them. || 17. ποιητέον] conii. θετέον vel δοτέον Torst., ποιητέον etiam Philop. Soph., δοτέον in interpret. Simpl. 188, 23. 31, vulg. defendit Bon., Ind. Ar. 609 a, 23 || 20. *καὶ τὸ δρᾶν* post τὸ τῇ ὀψεί αἰσθάνεσθαι addenda esse censet Christ.

τῆς ὕλης ἕκαστον. διὸ καὶ ἀπελθόντων τῶν αἰσθητῶν ἐνεί-  
σιν αἱ αἰσθήσεις καὶ φαντασῖαι ἐν τοῖς αἰσθητηρίοις. 25

- 4 ἡ δὲ τοῦ αἰσθητοῦ ἐνέργεια καὶ τῆς αἰσθήσεως ἡ αὐτὴ μὲν ἐστὶ  
καὶ μία, τὸ δ' εἶναι οὐ τὸ αὐτὸ αὐταῖς· λέγω δ' οἷον ὁ ψόφος ὁ κατ'  
ἐνέργειαν καὶ ἡ ἀκοὴ ἡ κατ' ἐνέργειαν· ἐστὶ γὰρ ἀκοὴν ἔχοντα  
μὴ ἀκούειν, καὶ τὸ ἔχον ψόφον οὐκ αἰεὶ ψοφεῖ. ὅταν δ' ἐνεργῇ  
τὸ δυνάμενον ἀκούειν καὶ ψοφῇ τὸ δυνάμενον ψοφεῖν, τότε 30  
ἡ κατ' ἐνέργειαν ἀκοὴ ἅμα γίνεται καὶ ὁ κατ' ἐνέργειαν ψό-  
φος, ὧν εἴπειεν ἂν τις τὸ μὲν εἶναι ἄκουσιν τὸ δὲ ψόφησιν. 426a
- 5 εἰ δὲ ἐστὶν ἡ κίνησις καὶ ἡ ποίησις καὶ τὸ πάθος ἐν τῷ ποιου-  
μένῳ, ἀνάγκη καὶ τὸν ψόφον καὶ τὴν ἀκοὴν τὴν κατ' ἐνέρ-  
γειαν ἐν τῇ κατὰ δύναμιν εἶναι· ἡ γὰρ τοῦ ποιητικοῦ καὶ κινη-  
τικοῦ ἐνέργεια ἐν τῷ πάσχοντι ἐγγίνεται· διὸ οὐκ ἀνάγκη τὸ 5  
κινεῖν κινεῖσθαι. ἡ μὲν οὖν τοῦ ψοφητικοῦ ἐνέργειά ἐστὶ  
ψόφος ἢ ψόφησις, ἡ δὲ τοῦ ἀκουστικοῦ ἀκοὴ ἢ ἄκουσις· διττὸν
- 6 γὰρ ἡ ἀκοὴ, καὶ διττὸν ὁ ψόφος. ὁ δ' αὐτὸς λόγος καὶ ἐπὶ τῶν  
ἄλλων αἰσθήσεων καὶ αἰσθητῶν. ὥσπερ γὰρ ἡ ποίησις καὶ ἡ  
πάθησις ἐν τῷ πάσχοντι ἀλλ' οὐκ ἐν τῷ ποιούντι, οὕτω καὶ ἡ 10  
τοῦ αἰσθητοῦ ἐνέργεια καὶ ἡ τοῦ αἰσθητικοῦ ἐν τῷ αἰσθητικῷ.  
ἀλλ' ἐπ' ἐνίων μὲν ὠνόμασται, οἷον ἡ ψόφησις καὶ ἡ ἄκουσις, ἐπὶ  
δ' ἐνίων ἀνώνυμον θάτερον· ὅρασις γὰρ λέγεται ἡ τῆς ὀψεως  
ἐνέργεια, ἡ δὲ τοῦ χρώματος ἀνώνυμος, καὶ γεῦσις ἡ τοῦ
- 7 γευστικοῦ, ἡ δὲ τοῦ χυμοῦ ἀνώνυμος. ἐπεὶ δὲ μία μὲν ἐστὶν 15  
ἡ ἐνέργεια ἡ τοῦ αἰσθητοῦ καὶ ἡ τοῦ αἰσθητικοῦ, τὸ δ' εἶναι ἕτε-  
ρον, ἀνάγκη ἅμα φθεῖρεσθαι καὶ σώζεσθαι τὴν οὕτω λεγο-  
μένην ἀκοὴν καὶ ψόφον, καὶ χυμὸν δὴ καὶ γεῦσιν καὶ τὰ  
ἄλλα ὁμοίως· τὰ δὲ κατὰ δύναμιν λεγόμενα οὐκ ἀνάγκη·

25. αἱ om. SWX Them. Simpl. Soph. || 26. ἡ δὲ...426 b, 7. φθεῖρει spuria esse suspicatur Susemihl, Oecon. p. 85 || 27. οὐ τὸ αὐτὸ αὐταῖς E (Trend.) L Torst., οὐ ταῦτόν αὐταῖς Bek. Trend., αὐταῖς οὐ ταῦτόν STUVW y Soph., αὐταῖς οὐ τὸ αὐτό Them. || οἷον ὁ ψόφος ὁ ELW Soph. Torst., οἷον ψόφος ὁ reliqui ante Torst. omnes || 28. καὶ ἡ ἀκοὴ ἡ EL Soph. Torst., καλ...ἐνέργειαν om. T, καὶ ἀκοὴ ἡ reliqui ante Torst. omnes || 30. τότε καὶ ἡ TW || τότε...31. γίνεται om. E, sed. in marg. add. (Stapf.) || 426a, 1. ὧν] ὥστ' TW, ὥστε καὶ SUV, ὧν leg. etiā Soph. || εἴποιεν EL, εἴποι y Soph., φήσειεν SUVX || 2. εἰ...12. οἷον e duabus recensionibus contaminata iudicat Torst., prioris esse 9. ὥσπερ...11. αἰσθητικῷ, posterioris 4. ἡ γὰρ...6. κινεῖσθαι || 2. δ' ἔστιν W Bek. Trend., δὴ ἔστιν E (Trend.) et reliqui codd. Soph. Torst. || ποιουμένῳ] κινουμένῳ Ald. Bywater, J. of Ph., p. 55 || 6. ἐστὶν ante ἐνέργεια EL, post 7. ψόφησις Ty, om. Soph. || 9. ὥσπερ... 11. αἰσθητικῷ post 6. κινεῖσθαι transposuit Biehl, eodem quo vulg. ordine leg. etiam Philop. 474, 16 sqq. Soph. 111, 30 sqq. || 9. ὥσπερ γὰρ] καὶ ὥσπερ TW y, ὥσπερ



receptive of the sensible object without its matter. And this is why the sensations and images remain in the sense-organs even when the sensible objects are withdrawn.

Now the actuality of the sensible object is one and the same 4  
 with that of the sense, though, taken in the abstract, sensible object and sense are not the same. I mean, for example, actual sound and actual hearing are the same : for it is possible to have hearing and yet not hear; again, that which is resonant is not always sounding. But when that which is capable of hearing operantly hears and that which is capable of sounding sounds, the actual hearing and the actual sound occur simultaneously, and we might, if we pleased, call them audition and resonance respectively. If, then, motion, action 5  
 and passivity reside in that which is acted upon, then of necessity it is in the potentiality of hearing that there is actual sound and there is actual hearing. For the activity of agent and movent comes into play in the patient; and this is why that which causes motion need not itself be moved. The actuality of the resonant, then, is sound or resonance, and the actuality of that which can hear is hearing or audition, hearing and sound both having two meanings. The same account may be given of the other senses and their objects. 6  
 For, just as acting and being acted upon are in the subject acted upon and not in the agent, so also the actuality of the sensible object and that of the sensitive faculty will be in the percipient subject. But in some cases both activities have a name; for example, resonance and audition: in other cases one or the other has no name. Thus, while the actuality of sight is called seeing, that of colour has no name; and, while the actuality of the taste-faculty is called tasting, that of the flavour has no name. Now, 7  
 as the actuality of the object and that of the faculty of sense are one and the same, although taken in the abstract they are different, hearing and sound thus understood as operant must simultaneously cease to be or simultaneously continue in being, and so also with flavour and taste, and similarly with the other senses and their objects: but when they are understood as potentialities, there is no

γὰρ καὶ EL || 10. ἀλλ' καὶ LTU, ἀλλ' etiam Soph. || οὐκ ἐν] οὐ κὰν E (Rr.) || 11. ἐνέργεια...αἰσθητικοῦ om. TUWY, tuetur Philop. || 12. μὲν καὶ ὠνόμ. rec. E (Trend.) TUWXY Philop., καὶ om. Soph. || ἐπ' ἐνίων δ' L, ἐπ' ἐνίων δὲ Them. Soph. || 16. ἡ ἐνέργεια E Soph. v. l. (om. ἡ cum codd. Hayduck, 112, 14) Torst., om. ἡ reliqui ante Torst. omnes || ἡ post ἐνέργ. om. TVWY Soph. || ἡ post καὶ solus E, om. etiam Soph. || 17. ἀρα φθ. STY, φθ. ἄμα L, ἄμα φθ. etiam Philop. Simpl. Soph.

- 8 ἀλλ' οἱ πρότερον φυσιολόγοι τοῦτο οὐ καλῶς ἔλεγον, οὐθὲν 20  
οἰόμενοι οὔτε λευκὸν οὔτε μέλαν εἶναι ἄνευ ὄψεως, οὐδὲ χυ-  
μὸν ἄνευ γεύσεως. τῇ μὲν γὰρ ἔλεγον ὀρθῶς, τῇ δ' οὐκ ὀρ-  
θῶς· διχῶς γὰρ λεγομένης τῆς αἰσθήσεως καὶ τοῦ αἰσθητοῦ,  
τῶν μὲν κατὰ δύνάμιν τῶν δὲ κατ' ἐνέργειαν, ἐπὶ τούτων  
μὲν συμβαίνει τὸ λεχθέν, ἐπὶ δὲ τῶν ἐτέρων οὐ συμβαίνει. 25  
ἀλλ' ἐκεῖνοι ἀπλῶς ἔλεγον περὶ τῶν λεγομένων οὐχ ἀπλῶς.
- 9 εἰ δὴ συμφωνία φωνῆ τίς ἐστίν, ἡ δὲ φωνὴ καὶ ἡ  
ἀκοή ἐστίν ὡς ἓν ἐστι, [καὶ ἐστίν ὡς οὐχ ἓν τὸ αὐτό], λό-  
γος δ' ἡ συμφωνία, ἀνάγκη καὶ τὴν ἀκοὴν λόγον τινὰ εἶ-  
ναι. καὶ διὰ τοῦτο καὶ φθείρει ἕκαστον ὑπερβάλλον, καὶ τὸ 30  
ὀξύ καὶ τὸ βαρὺ, τὴν ἀκοήν· ὁμοίως δὲ καὶ ἐν χυμοῖς τὴν  
γεῦσιν, καὶ ἐν χρώμασι τὴν ὄψιν τὸ σφόδρα λαμπρὸν ἢ ζο- 426b  
φερόν, καὶ ἐν ὁσφρήσει ἡ ἰσχυρὰ ὁσμὴ καὶ γλυκεῖα καὶ πικρά,  
ὡς λόγου τινὸς ὄντος τῆς αἰσθήσεως. διὸ καὶ ἡδέα μὲν, ὅταν  
εἰλικρινῇ καὶ ἀμιγῇ ὄντα αἴγεται εἰς τὸν λόγον, οἶον τὸ ὀξύ ἢ  
γλυκὺ ἢ ἀλμυρόν· ἡδέα γὰρ τότε· ὅλως δὲ μᾶλλον τὸ μεικ- 5  
τόν, συμφωνία ἢ τὸ ὀξύ ἢ τὸ βαρὺ, ἀφῆ δὲ τὸ θερμαντὸν ἢ ψυκ-  
τόν· ἢ δ' αἰσθησις ὁ λόγος· ὑπερβάλλοντα δὲ λυπεῖ ἢ φθείρει.
- 10 ἐκάστη μὲν οὖν αἰσθησις τοῦ ὑποκειμένου αἰσθητοῦ  
ἐστίν, ὑπάρχουσα ἐν τῷ αἰσθητηρίῳ ἢ αἰσθητήριον, καὶ  
κρίνει τὰς τοῦ ὑποκειμένου αἰσθητοῦ διαφοράς, οἶον λευ- 10  
κὸν μὲν καὶ μέλαν ὄψις, γλυκὺ δὲ καὶ πικρὸν γεῦσις.  
ὁμοίως δ' ἔχει τοῦτο καὶ ἐπὶ τῶν ἄλλων. ἐπεὶ δὲ καὶ τὸ

20. πρότεροι UVW, πρότερον Them. Soph. || 24. περὶ ESTV, ἐπὶ etiam Simpl. Soph. || 27. δὴ E (Trend.) SXY Simpl. Plutarch. ap. Simpl. Philop. Trend. Rodier, δὴ ἡ W, δ' ἡ reliqui codd. et Bek. Torst. Biehl, εἰ δ' ἡ φωνὴ συμφωνία τίς ἐστίν mavult Trend., probat Bywater, p. 55, secutus Prisc., qui praebebat p. 22, 24: ἡ φωνὴ συμφωνία εἴρηται παρὰ τῷ Ἀριστ., ac sane in interpret. habet ἡ δὲ φωνὴ συμφωνία τις Soph. || ἡ post καὶ om. LSTUVXY Philop. 476, 10, leg. Soph. 112, 30 sq. || 28. ἐστι post ἓν solus E, om. etiam Philop. Soph. || καὶ ἐστίν...αὐτὸ unc. incl. Torst., quem secutus est Biehl in ed. alt., leg. etiam Soph., tuetur Rodier || τὸ αὐτὸ tantum in priorē ed. unc. incl. Biehl, non legisse videtur Philop., ἡ οὐ τὸ αὐτὸ STXY, οὐδὲ τὸ αὐτὸ V, καὶ τὸ αὐτὸ coni. Susemihl || 30. καὶ post τοῦτο om. LW, leg. Simpl. Soph. || 31. ὁμοίως δὲ om. STUVWXY, leg. Soph. || 426 b, 1. ἡ τὸ ζ. STUVWXY, τὸ om. etiam Soph. || 2. πικρά] λιπαρά EL et fortasse Philop. 476, 30, πικρά etiam Soph. || 3. διὸ om. SX et pr. U, διὸ καὶ om. V || 4. ἀμιγῇ ὄντα] ἀμιγῇ E Bek. Trend., ἀμιγῇ ἢ ὄντα L, ἀμικτα ὄντα STVWXY et in paraphr. Simpl., ἀμιγῇ ὄντα U Soph. Torst. || αἴγεται EL, αἴγεται post 3. ὅταν STUVWXY || 6. ante συμφωνία addendum esse ei censet Essen, <εἰ ἐν> συμφωνία coni. Susemihl, <ὥσπερ> συμφωνία vel <ἐν> συμφωνία <ὄν> Shorey, A. J. Ph. XXII, p. 162, fort. ἀκοή μὲν ante συμφωνία intelligas

such necessity. On this point the earlier natural philosophers were 8  
 in error, when they supposed that without seeing there was  
 neither white nor black, and without tasting no flavour.  
 Their statement is in one sense true, in another false.  
 For the terms sensation and sensible thing are ambiguous. When  
 they mean the actual sensation and the actual sensible thing, the  
 statement holds good: when they mean potential sensation and  
 potential sensible, this is not the case. But our predecessors  
 used terms without distinguishing their various meanings.

If, then, concord consists in a species of vocal sound, and if vocal 9  
 sound and hearing are in one aspect one and the same, [*though in  
 another aspect not the same*], and if concord is a proportion, it  
 follows that hearing must also be a species of proportion. And  
 this is the reason why hearing is destroyed by either  
 excess, whether of high pitch or of low. And similarly,  
 in the case of flavours, excess destroys the taste, and in  
 colours excessive brightness or darkness destroys the  
 sight, and so with smell, whether the excessive odour be  
 agreeable or pungent. All this implies that the sense is a proportion.  
 Hence sensibles are, it is true, pleasurable when they are brought  
 into the range of this proportion pure and unmixed; for example,  
 the shrill, the sweet, the salt: in that case, I say, they are pleasur-  
 able. But, speaking generally, that in which ingredients are blended  
 is pleasurable in a higher degree, accord more pleasurable to the  
 ear than high pitch or low pitch alone, and to touch that which  
 admits of being still further heated or cooled. The due proportion  
 constitutes the sense, while objects in excess give pain or cause  
 destruction.

Now each sense is concerned with its own sensible object, being 10  
 resident in the organ, *quā* sense-organ, and judges the specific  
 differences of its own sensible object. Thus sight pronounces upon  
 white and black, taste upon sweet and bitter, and so with the rest.

licet || συμφωνία...ψυκτόν unc. incl. Torst., qui colon post μεικτόν posuit, ἀφῆ...ψυκτόν  
 eici, sed συμφωνία...βαρύ retineri et post μεικτόν virgulam poni vult Dittenberger, p. 1614,  
 totum locum interpretantur Simpl. Philop. || ἀφῆ...ψυκτόν post 5. ἀλμυρόν transposuit  
 Biehl, quod iam Dittenberger l. 1. voluerat || ἡ τὸ βαρύ E (Trend.), καὶ τὸ βαρύ L, καὶ  
 βαρύ U V W, reliqui ante Biehlum omnes ἡ βαρύ || post βαρύ virg. Trend., vulg.  
 punctum || ἀφῆ γ Philop. Trend., ἀφῆ E (Bhl.) reliqui codd. et Bek., Soph. 113, 15  
 interpretatur τὸ αὐτὸ δὲ καὶ ἐπὶ τῶν ἄλλων ὡς τῶν τῆς ἀφῆς, unde ἀφῆς eum legisse  
 suspicatur Biehl, ἀφῆς probat etiam Steinhart, ἐν τῇ ἀφῇ in interpr. Simpl., ἀλέα δ' ἡ pro  
 ἀφῇ δὲ conl. Madvig, p. 473 || θερμαντικόν et ψυκτικόν W X, vulgatam tuerentur etiam  
 Philop. Simpl. Soph. || 7. ὁ om. S U V γ || λυπεῖ] λύει Soph. Bywater, p. 55, e Prisc. 22,  
 27 || 12. καὶ post δὲ om. T U V W γ.

λευκὸν καὶ τὸ γλυκὺ καὶ ἕκαστον τῶν αἰσθητῶν πρὸς ἕκαστον  
κρίνομεν, τίνι καὶ αἰσθανόμεθα ὅτι διαφέρει; ἀνάγκη δὴ αἰ-  
11 σθήσει· αἰσθητὰ γὰρ ἔστιν. ἥ καὶ δῆλον ὅτι ἡ σὰρξ οὐκ ἔστι 15  
τὸ ἔσχατον αἰσθητήριον· ἀνάγκη γὰρ ἦν ἀπτόμενον αὐτοῦ  
κρίνειν τὸ κρίνον. οὔτε δὴ κεχωρισμένοις ἐνδέχεται κρίνειν ὅτι  
ἕτερον τὸ γλυκὺ τοῦ λευκοῦ, ἀλλὰ δεῖ ἐνί τινι ἄμφω δῆλα  
εἶναι. οὕτω μὲν γὰρ κἂν εἰ τοῦ μὲν ἐγὼ τοῦ δὲ σὺ αἰσθῶ, 20  
δῆλον ἂν εἴη ὅτι ἕτερα ἀλλήλων. δεῖ δὲ τὸ ἐν λέγειν ὅτι 20  
ἕτερον· ἕτερον γὰρ τὸ γλυκὺ τοῦ λευκοῦ. λέγει ἄρα τὸ αὐτό.  
12 ὥστε ὡς λέγει, οὕτω καὶ νοεῖ καὶ αἰσθάνεται. ὅτι μὲν οὐκ οὐχ  
οἶόν τε κεχωρισμένοις κρίνειν τὰ κεχωρισμένα, δῆλον· ὅτι  
δ' οὐδ' ἐν κεχωρισμένῳ χρόνῳ, ἐντεῦθεν. ὥσπερ γὰρ τὸ αὐτὸ  
λέγει ὅτι ἕτερον τὸ ἀγαθὸν καὶ τὸ κακόν, οὕτω καὶ ὅτε θά- 25  
τερον λέγει ὅτι ἕτερον καὶ θάτερον (οὐ κατὰ συμβεβηκός τὸ  
ὅτε· λέγω δ', οἶον νῦν λέγω ὅτι ἕτερον, οὐ μέντοι ὅτι νῦν ἕτε-  
ρον· ἀλλ' οὕτω λέγει, καὶ νῦν, καὶ ὅτι νῦν)· ἅμα ἄρα. ὥστε  
13 ἀχώριστον καὶ ἐν ἀχωρίστῳ χρόνῳ. ἀλλὰ μὴν ἀδύνατον ἅμα  
τὰς ἐναντίας κινήσεις κινεῖσθαι τὸ αὐτὸ ἢ ἀδιαίρετον καὶ ἐν 30  
ἀδιαιρέτῳ χρόνῳ. εἰ γὰρ γλυκὺ, ὥδὲ κινεῖ τὴν αἰσθησιν  
ἢ τὴν νόησιν, τὸ δὲ πικρὸν ἐναντίως, καὶ τὸ λευκὸν ἑτέρως. 427a  
ἄρ' οὖν ἅμα μὲν καὶ ἀριθμῷ ἀδιαίρετον καὶ ἀχώριστον τὸ  
κρίνον, τῷ εἶναι δὲ κεχωρισμένον; ἔστι δὴ πως ὡς τὸ διαι-  
ρετὸν τῶν διηρημένων αἰσθάνεται, ἔστι δ' ὡς ἢ ἀδιαίρετον· τῷ  
14 εἶναι μὲν γὰρ διαιρετόν, τόπῳ δὲ καὶ ἀριθμῷ ἀδιαίρετον. ἢ 5

14. τινὰ L, τινί Soph. Bek., τίνι sine dubio Them., correxit Trendl., qui post διαφέρει interrogationis signum posuit, secutus est Torst. || τίνι καὶ τινὶ κοινῷ coni. Essen || 16. γὰρ ἂν ἦν W Torst., ἂν om. reliqui, etiam Philop. Soph. || αὐτοῦ] αὐτὸ coni. Essen, cui assentitur Susemihl || 19. γὰρ] ἔχει LV, γὰρ ἔχει E (Trendl.), legit οὕτω μὲν γὰρ κἂν ei etiam Them. 85, 15 || 20. verba δεῖ...21. λευκοῦ post., 21. λέγει... 22. αἰσθάνεται pr., recensiois esse iudicat Torst. || 21. λέγει ἄρα τὸ αὐτό ut inertein repetitionem eiecta vult Trendl., legit etiam Philop. in interpr. 483, 14 || 22. καὶ om. ST V || νοεῖ] φρονεῖ UX, cui lectioni favet Rodier II, 386, καὶ νοεῖ etiam Philop. || 24. ἐν] ἐν E, οὐδ' ἐν] ἐν in textum recepit Torst., reliqui οὐδ' ἐν κεχ., etiam Soph. || 25. τὸ ante κακόν om. E Ly || 26. καὶ ante οὐ κατὰ συμβεβηκός et Them. 85, 25 et Philop. 483, 22 legisse suspicatur Rodier || οὐ κατὰ...28. ὅτι νῦν in parenth. poni voluit Bywater, p. 55 || 30. διαίρετον pr. E (Trend. Bus.), a addidit antiqua manus (Trend.) || 31. τὸ γλυκὺ TW et rec. E Bek. Trendl., defendit etiam Barco, p. 94, τὸ om. pr. E et reliqui || 427a, 1. ἢ] καὶ rec. E in rasura (Rr.) ST W || 2. ἄρ' οὖν...3. κεχωρισμένον post., 3. ἔστι δὴ...5. ἀδιαίρετον pr., editionis esse iudicat Torst., quod refellit Neuhaeuser, p. 40 || 2. καὶ post μὲν om. W, leg. καὶ etiam Alex., ἀπ. καὶ λόγ. 94, 12 || ἀριθμῷ ἐν ἀδιαίρετον pr. E (Trend. Bus.), ἐν ἀριθμῷ ἀδιαίρετον rec. E (Trend. Bus.), ἀριθμῷ ἀδιαί-

But, since we compare white and sweet and each of the sensibles with each, what in fact is it by means of which we perceive the difference between them? It must be by sense, for they are sensibles. And thus it is clear that **11** the flesh is not the ultimate organ of sense; for, if it were, it would be necessary that that which judges should judge by contact with the sensible object. Nor indeed can we with separate organs judge that sweet is different from white, but both objects must be clearly presented to some single faculty. For, if we could, then the mere fact of my perceiving one thing and your perceiving another would make it clear that the two things were different. But the single faculty is required to pronounce them different, for sweet and white are pronounced to be different. It is one and the same faculty, then, which so pronounces. Hence, as it pronounces, so it also thinks **12** and perceives. Clearly, then, it is not possible with separate organs to pronounce judgment upon things which are separate: nor yet at separate times, as the following considerations show. For, as it is one single faculty which pronounces that good and bad are different, so when it judges "*A* is different from *B*" it also judges "*B* is different from *A*" (and in this case the "when" is not accidental; I mean, accidental in the sense in which I may now say "Such and such things are different" without saying that they are different now. On the contrary, it pronounces now and pronounces that *A* and *B* are different now). That which judges judges, then, instantaneously and hence as an inseparable unit in an inseparable time. But, again, it is impossible for the same thing, in **13** so far as indivisible and affected in indivisible time, to be moved at the same instant with contrary motions. For, if the object be sweet, it moves sense or thought in such and such a way, but what is bitter moves it in a contrary way, and what is white in a different way.

**A pro-** Is, then, that which judges instantaneous in its judgment  
**visional** and numerically undivided and inseparable, although  
**hypo-** separated logically? Then it is in a certain sense that  
**thesis.** which is divided which perceives divided objects; in another sense it is *quâ* indivisible that the divided perceives them: that is to say, logically it is divisible, locally and numerically it is indivisible. Or is **14**

*περον* etiam Alex. l. 1. || καὶ χρόνῳ ἀχώριστον U y et rc. E in litura (Trend. Bus.) Philop. 484, 10, καὶ τόπῳ ἀχώριστον coni. Susemihl, textum receptum tuetur Alex. l. 1. et vet. transl. || τὸ κρῖνον om. corr. E (Trend. Bus.) || 3. δὴ] δέ S U Alex. || pro τὸ διαίρ. coni. δν διαίρ. Steinhart || 4. ὡς om. T W, leg. Alex. || 7] τὸ X, om. Alex. || διαίρετόν pr. E, ἀδιαίρετον etiam Alex. || 5. τόπῳ δὲ καὶ χρόνῳ καὶ ἀριθμῷ U, καὶ χρόνῳ non habent Alex. Them. Simpl. Philop. || οὐ διαίρετόν T, ἀδιαίρετον etiam Alex. Simpl. Philop.

οὐχ οἶόν τε; δυνάμει μὲν γὰρ τὸ αὐτὸ καὶ ἀδιαίρετον τὰ-  
 ναντία, τῷ δ' εἶναι οὐ, ἀλλὰ τῷ ἐνεργεῖσθαι διαιρετόν, καὶ  
 οὐχ οἶόν τε ἅμα λευκὸν καὶ μέλαν εἶναι, ὥστ' οὐδὲ τὰ εἶδη  
 15 πᾶσχειν αὐτῶν, εἰ τοιοῦτον ἡ αἰσθησις καὶ ἡ νόησις. ἀλλ'  
 ὥσπερ ἦν καλοῦσί τινες στιγμὴν, ἥ μία ἢ δύο, ταύτη 10  
 καὶ διαιρετή. ἥ μὲν οὖν ἀδιαίρετον, ἐν τὸ κρῖνόν ἐστι καὶ ἅμα,  
 ἥ δὲ διαιρετόν, οὐχ ἐν ὑπάρχει· δις γὰρ τῷ αὐτῷ χρήται σημεῖω  
 ἅμα· ἥ μὲν οὖν δυσὶ χρήται τῷ πέρατι, δύο κρίνει καὶ κεχωρι-  
 σμένα ἔστιν ὡς κεχωρισμένῳ· ἥ δ' ἐνί, <ἐν> καὶ ἅμα. περὶ  
 μὲν οὖν τῆς ἀρχῆς ἥ φαμέν τὸ ζῶον αἰσθητικὸν εἶναι, διω- 15  
 ρίσθω τὸν τρόπον τοῦτον.

3 Ἐπεὶ δὲ δύο διαφοραῖς ὀρίζονται μάλιστα τὴν ψυχὴν,  
 κινήσει τε τῇ κατὰ τόπον καὶ τῷ νοεῖν καὶ τῷ κρίνειν καὶ  
 αἰσθάνεσθαι, δοκεῖ δὲ καὶ τὸ νοεῖν καὶ τὸ φρονεῖν ὥσπερ  
 αἰσθάνεσθαι τι εἶναι (ἐν ἀμφοτέροις γὰρ τούτοις κρίνει τι ἢ 20  
 ψυχὴ καὶ γνωρίζει τῶν ὄντων), καὶ οἱ γε ἀρχαῖοι τὸ φρο-  
 νεῖν καὶ τὸ αἰσθάνεσθαι ταῦτόν εἶναι φασιν, ὥσπερ καὶ Ἐμ-  
 πεδοκλῆς εἶρηκε “πρὸς παρεὸν γὰρ μῆτις ἀέξεται ἀνθρώ-  
 ποισιν” καὶ ἐν ἄλλοις “ὅθεν σφίσιν αἰεὶ καὶ τὸ φρονεῖν  
 ἀλλοῖα παρίσταται,” τὸ δ' αὐτὸ τούτοις βούλεται καὶ τὸ Ὀμή- 25  
 2 ρου “τοῖος γὰρ νόος ἐστίν,” πάντες γὰρ οὗτοι τὸ νοεῖν σωμα-  
 τικὸν ὥσπερ τὸ αἰσθάνεσθαι ὑπολαμβάνουσιν, καὶ αἰσθάνε-

6. καὶ ἀδιαίρετον] διαιρετόν καὶ ἀδιαίρετον U W y Torst., καὶ διαιρετόν καὶ ἀδιαίρετον Them., οὐ διαιρετόν καὶ διηρημένον T, ἀδιαίρετον καὶ διηρημένον rec. E in marg. (Rr.) X, textum receptum tuetur Alex. 94, 16 et vet. transl., defendit Neuhaeuser, p. 42 || τὰναντία] καὶ τὰναντία E U, om. y et, ut videtur, Them. 86, 12 Torst., leg. τὰναντία (omisso καὶ) etiam Alex. Philop. et vet. transl., καὶ τὸναντιόν coni. Susemihl || 7. διαιρετόν] διαιρεῖται coni. Torst. (quod quidem habet Philop. in interpr. 484, 21), ἀδιαίρετον Susemihl || 10. ὥσπερ ἦν] ὥσπερ ἐν coni. Trend. || ἡ μία ἢ δύο E, ἡ μία καὶ δύο L, ἡ μία καὶ ἡ δύο Bek. Trend. Torst., “aut unum aut duo” vet. transl., ἡ μίαν ἢ δύο Alex. 94, 20, ἡ μία αἱ δύο in codd. Alex. 96, 10, ἡ μία, ἡ δύο coni. Rodier || 11. καὶ om. L, καὶ ἀδιαίρετος καὶ διαιρετή, quod in interpret. habent Them. et Simpl., in textum recepit Torst., vulgatam tuetur Alex. l. l. et vet. transl. || ἡ μὲν...14. ἅμα e duab. rec. contam., post. 11. ἡ μὲν...13. ἅμα, pr. 13. ἡ μὲν...14. ἅμα iudicat Torst., cui adversatur Neuhaeuser, p. 40 || 11. ἀδιαίρετος E, sed s in litura (Trend.), ST U Alex. || καὶ ἅμα om. y || 12. διαιρετόν ὑπάρχει οὐχ ἐν Ald. Sylb. Basil. Torst., διαιρετόν οὐχ ἐν ὑπάρχει E<sub>2</sub> (Bhl.) Ty Soph., “non unum” vet. transl., οὐχ ἐν om. reliqui codd. et Alex. 94, 21 Bek. Trend., quibus assentitur Neuhaeuser, p. 45 || δις γὰρ τῷ E<sub>2</sub> T W vet. transl. Ald. Sylb. Basil. Torst., δις γὰρ τῷ y et, omisso γὰρ, Soph., γὰρ om. reliqui codd. et Alex. Bek. Trend. || 13. ἅμα] μα pr. E, add. ἃ rec. E (Rr.) || ὡς δυοὶ coni. Trend. et Torst. || virgula a Bek. post χρήται positam sustulerunt Trend. Torst. || ante κεχωρισμένα add. τὰ rec. E (Rr.) || 14. κεχωρισμένῳ] ita E L T Torst. Belger, reliqui codd. aut κεχωρισμένων aut κεχωρισμένα, τῷ κεχωρισμένῳ Alex., κεχωρισμένον Soph. 114, 38 || ἡ δὲ ἐν, ἐνί T W y Alex. Simpl. vet.

this impossible? For the same indivisible unity, though in potentiality each of two opposites, in the order of thought and  
 Objection.

being is not so, but in actual operation is divided: it is impossible that it should be at the same time both white and black, and hence impossible that it should receive at the same time the forms of white and black, if reception of the forms constitutes sensation and thought. Rather is the case parallel to that of <sup>15</sup>

Analogy  
of the  
point.

the point, as some describe it, which is divisible in so far as it is regarded as one or two. Well then, in so far as the faculty which judges is indivisible, it is one and judges instantaneously; but, in so far as it is divisible, it is not one, for it uses the same point at the same time twice. So far as it treats the boundary-point as two, it passes judgment on two separate things with a faculty which in a manner is separated into two; so far as it treats the point as one, it passes judgment on one thing, and that instantaneously. So much, then, for the principle in virtue of which we call the animal capable of sensation.

There are two different characteristics by which the soul is principally defined; firstly, motion from place to place and, secondly, thinking and judging and perceiving. Both thought and intelligence are commonly regarded as a kind of perception, since the soul in both of these judges and recognises something existent. <sup>3</sup>

Sensation and  
thought  
of old  
identified.

The ancients, at any rate, identify intelligence and perception: thus, in the words of Empedocles: "Wisdom for mankind is increased according to that which is present to them": and again "Whence they have also continually a shifting succession of thoughts." Homer's meaning, too, is the same when he says: "Such is the mind of men." In fact, all of them conceive thought to be corporeal <sup>2</sup>

transl. Bek. Trend. Torst., ἐνὶ ὁμοίᾳ, omisso καὶ, etiam Soph., fort. ἡ δὲ ἐνὶ, ἐν Christ || 15. αἰσθητικὸν εἶναι τὸ ζῶον STU || ὁρίσθω E (Bek., etiam Bhl.) ὁρίσθω E (Rr.), διωρίσθω E<sub>2</sub> Soph. || 18. καὶ τὸ κρίνειν καὶ νοεῖν W, καὶ τῷ νοεῖν καὶ τῷ φρονεῖν S UV, τῷ κρίνειν καὶ νοεῖν Torst., vulgatam tuentur etiam in interpr. Simpl. 202, 8 sq. Philop. 489, 13 Soph. 115, 18 || 19. annotat in margine Bas.: post αἰσθάνεσθαι deesse videntur, quae Argyropylus reddidit his verbis: considerandum est, si quid intersit inter intelligere ac sentire. cui opinioni assentitur Torst., negat excidisse quicquam Bon., stud. Arist. II, III, 131, qui cum Plutarcho, Philopono, Simplicio apodosin, quam iam Alex. apud Philop. 489, 9 desideraverat, ab 427 b, 6. ὅτι μὲν οὖν incipit; in interpungendis singulis membris, praeunte Biehlio, secutus sum Bon. || 19. δὲ] γὰρ coni. Susemihl || καὶ post δὲ om. LT || 20. γὰρ] τε γὰρ ESU, τε om. etiam Soph. || κρίνει τε ἡ ψυχὴ T, ἡ ψυχὴ κρίνει τε S UVWY, ἡ ψυχὴ κρίνει τε X, vulgatam tuetur etiam Soph. || 21. γε corr. E, τε S UV || 23. ἐναέξεται E<sub>1</sub>, nunc αἰξεται (Bhl.), ἀέξεται etiam Them. Philop. 485, 24 Soph. || 25. τὸ δ' αὐτὸ...b, 6. ἡ αὐτὴ εἶναι in parenth. ponenda putat Susemihl, Oecon., p. 85 || 25. βούλεται τοῦτοις STUVWY, τὸ αὐτὸ τοῦτο sed post ο rasura E<sub>2</sub> (Bhl.) || 27. ὥσπερ καὶ τὸ SUV.

σθαί τε καὶ φρονεῖν τῷ ὁμοίῳ τὸ ὁμοιον, ὥσπερ καὶ ἐν τοῖς  
κατ' ἀρχὰς λόγοις διωρίσαμεν· καίτοι ἔδει ἅμα καὶ περὶ  
τοῦ ἡπατῆσθαι αὐτοὺς λέγειν, οἰκειότερον γὰρ τοῖς ζώοις, 427b  
καὶ πλείω χρόνον ἐν τούτῳ διατελεῖ ἡ ψυχὴ· διὸ ἀνάγκη  
ἦτοι, ὥσπερ ἔνιοι λέγουσι, πάντα τὰ φαινόμενα εἶναι ἀληθῆ,  
ἢ τὴν τοῦ ἀνομοίου θίξιν ἀπάτην εἶναι, τοῦτο γὰρ ἐναντίον τῷ  
τὸ ὁμοιον τῷ ὁμοίῳ γνωρίζειν· δοκεῖ δὲ καὶ ἡ ἀπάτη καὶ 5  
3 ἡ ἐπιστήμη τῶν ἐναντίων ἢ αὐτὴ εἶναι. ὅτι μὲν οὖν οὐ ταυτὸν  
ἐστι τὸ αἰσθάνεσθαι καὶ τὸ φρονεῖν, φανερόν. τοῦ μὲν  
γὰρ πᾶσι μέτεστι, τοῦ δὲ ὀλίγοις τῶν ζώων. ἀλλ' οὐδὲ τὸ  
νοεῖν, ἐν ᾧ ἐστὶ τὸ ὀρθῶς καὶ τὸ μὴ ὀρθῶς, τὸ μὲν ὀρθῶς  
φρόνησις καὶ ἐπιστήμη καὶ δόξα ἀληθῆς, τὸ δὲ μὴ ὀρθῶς 10  
τὰναντία τούτων, οὐδὲ τοῦτο [δ'] ἐστὶ ταῦτο τῷ αἰσθάνεσθαι· ἡ  
μὲν γὰρ αἰσθησις τῶν ιδίων αἰεὶ ἀληθῆς, καὶ πᾶσιν ὑπάρ-  
χει τοῖς ζώοις, διανοεῖσθαι δ' ἐνδέχεται καὶ ψευδῶς, καὶ  
4 οὐδενὶ ὑπάρχει ᾧ μὴ καὶ λόγος. φαντασία γὰρ ἕτερον καὶ  
αἰσθήσεως καὶ διανοίας· αὐτὴ τε οὐ γίγνεται ἄνευ αἰσθή- 15  
σεως, καὶ ἄνευ ταύτης οὐκ ἔστιν ὑπόληψις. ὅτι δ' οὐκ ἔστιν  
ἡ αὐτὴ νόησις καὶ ὑπόληψις, φανερόν. τοῦτο μὲν γὰρ τὸ  
πάθος ἐφ' ἡμῖν ἐστίν, ὅταν βουλώμεθα (πρὸ ὁμμάτων γὰρ  
ἐστι τι ποιήσασθαι, ὥσπερ οἱ ἐν τοῖς μνημονικοῖς τιθέμενοι καὶ  
εἰδωλοποιοῦντες), δοξάζειν δ' οὐκ ἐφ' ἡμῖν· ἀνάγκη γὰρ ἡ 20  
ψεύδεσθαι ἢ ἀληθεύειν. ἔτι δὲ ὅταν μὲν δοξάσωμεν δεινόν  
τι ἢ φοβερόν, εὐθὺς συμπάσχομεν, ὁμοίως δὲ καὶ θαρρα-  
λέον· κατὰ δὲ τὴν φαντασίαν ὡσαύτως ἔχομεν ὥσπερ ἂν εἰ  
5 θεώμενοι ἐν γραφῇ τὰ δεινὰ ἢ θαρραλέα. εἰσὶ δὲ καὶ αὐτῆς  
τῆς ὑπολήψεως διαφοραί, ἐπιστήμη καὶ δόξα καὶ φρόνησις καὶ 25  
τὰναντία τούτων, περὶ ὧν τῆς διαφορᾶς ἕτερος ἔστω λόγος.

29. καίτοι...b, 2. ἡ ψυχὴ unc. incl. Essen III, p. 17 || 427 b, 2. τούτοις ST V y, τούτῳ etiam Simpl. Soph. || 4. τῷ τὸ S, ᾧ L, om. T U || 5. τὸ ὁμοιον τῷ ὁμοίῳ ST U V X y et E (Trend. Bhl.), τῷ ὁμ. τὸ ὁμ. T W Bek. Trend. Torst. || δοκεῖ δὲ οὕτω conl. Susemihl B. J. XXX, 47 || 6. ὅτι...16. ὑπόληψις. Hunc locum restituere tentat Essen III, 17 sqq. || 6. ταυτὸν] τὸ αὐτὸ pr. E (Trend.) y || 9. μὲν γὰρ ὀρθῶς T U W y et rec. E, om. γὰρ etiam Soph. || 11. δ' om. y Philop., δ' delendum esse censet etiam Vahlen, Oest. Gymn. Ztschr. 1868, p. 256 || ταυτὸν L Philop., τὸ αὐτὸ ST U V W X || 14. post λόγος punctum posui, vulg. colon || φαντασία γὰρ...24. θαρραλέα ab hoc loco aliena esse iudicat Freudenthal, p. 11, cui assentitur Susemihl, Phil. Woch. 1882, p. 1283 || ᾧ μὴ καὶ φαντασία· ἕτερον γὰρ (sc. ἡ φαντ.) incl. κατλ. conl. Steinhart || 15. δὲ pro τε conl. Susemihl || 16. ὅτι δ'...25. διαφοραὶ unc. incl. Essen III, p. 19 || 17. ἡ ante αὐτῆς delendum esse censet Schneider, Rhein. Mus. 1866, p. 448, unc. incl. Rodier || νόησις] om. y, quod probat Madvig, p. 473, φαντασία margo U, quod probant Susemihl Chaignet, Ess. sur la Psych. d'Ar. p. 445, in



like sensation and hold that we understand, as well as perceive, like by like: as we explained at the outset of the discussion.

This view refuted. They ought, however, at the same time to have discussed error, a state which is peculiarly characteristic of animal life and in which the soul continues the greater part of its time. It follows from their premisses that either all presentations of the senses must be true, as some affirm, or contact with what is unlike must constitute error; this being the converse of the position that like is known by like. But, as the knowledge of contraries is one and the same, so, too, it would seem, is error with respect to contraries one and the same.

Now it is clear that perception and intelligence are not the same thing. For all animals share in the one, but only a few in the other. And when we come to thinking, which includes right thinking and wrong thinking, right thinking being intelligence, knowledge and true opinion, and wrong thinking the opposites of these, neither is this identical with perception. For perception of the objects of the special senses is always true and is found in all animals, while thinking may be false as well as true and is found in none which have not reason also. Imagination, in fact, is something different both from perception and from thought, and is never found by itself apart from perception, any more than is belief apart from imagination. Clearly thinking is not the same thing as believing. For the former is in our own power, whenever we please: for we can represent an object before our eyes, as do those who range things under mnemonic headings and picture them to themselves. But opining is not in our power, for the opinion that we hold must be either false or true. Moreover, when we are of opinion that something is terrible or alarming, we at once feel the corresponding emotion, and so, too, with what is reassuring. But when we are under the influence of imagination we are no more affected than if we saw in a picture the objects which inspire terror or confidence. There are also different forms even of belief; knowledge, opinion, intelligence and their opposites. But the difference between these species must be reserved for another discussion.

textum recepit Biehl in ed. alt., reliqui codd. νόησις, etiam Simpl. Philop. || 19. ἔστι τι E, receperunt Biehl Rodier, om. U, ἔστι τι etiam Soph., τι om. reliqui omnes || 20. ἡ om. S T U W X y, leg. Soph. || 21. δοξάζωμεν L S U W, δοξάσωμεν etiam Philop. Soph. || 22. καθ' και ἐάν T y, καθ' ἡ L, και ἐάν ἡ S U V W X Soph., καθ' etiam Them. || 23. εἰ] οἱ T W Bek. Trend. Torst., ὥσπερ ἂν εἰ etiam Simpl. 221, 3 Soph. 118, 32, ὥσπερ θεώμενοι πάσχομεν in paraphr. Them., "sicut si essemus considerantes" vet. transl., εἰ recepit Biehl || 24. ἡ E Simpl. 221, 4 et Soph., reliqui codd. και || εἰσι δὲ...26. λόγος ab hoc loco aliena et fort. spuria esse putat Susemihl || και αὐτῆς] αὐτῆς και Essen || 25. και τάναντια τοῦτων unc. incl. Essen || 26. τὰ ἐναντία S U V W X || ἔσται X.

περὶ δὲ τοῦ νοεῖν, ἐπεὶ ἕτερον τοῦ αἰσθάνεσθαι, τούτου δὲ τὸ μὲν φαντασία δοκεῖ εἶναι τὸ δὲ ὑπόληψις, περὶ φαντασίας διορίσαντας οὕτω περὶ θατέρου λεκτέον. 6 εἰ δὴ ἐστὶν ἡ φαντασία καθ' ἣν λέγομεν φάντασμα τι 428a ἡμῖν γίγνεσθαι καὶ μὴ εἶ τι κατὰ μεταφορὰν λέγομεν, μία τίς ἐστὶ τούτων δύναμις ἢ ἕξις, καθ' ἣν κρίνομεν καὶ ἀληθεύομεν ἢ ψευδόμεθα. τοιαῦται δ' εἰσὶν αἰσθησις, δόξα, 7 ἐπιστήμη, νοῦς. ὅτι μὲν οὖν οὐκ ἔστιν αἰσθησις, δῆλον ἐκ 5 τῶνδε. αἰσθησις μὲν γὰρ ἦτοι δύναμις ἢ ἐνέργεια, οἷον ὄψις καὶ ὄρασις, φαίνεται δέ τι καὶ μηδετέρου ὑπάρχοντος τούτων, οἷον τὰ ἐν τοῖς ὕπνοις. εἴτα αἰσθησις μὲν αἰεὶ πάρεστι, φαντασία δ' οὔ. εἰ δὲ τῇ ἐνεργείᾳ τὸ αὐτό, πᾶσιν ἂν ἐνδέχοιτο τοῖς θηρίοις φαντασίαν ὑπάρχειν· δοκεῖ δ' οὔ, οἷον 10 μύρμηκι ἢ μελίττῃ ἢ σκώληκι. εἴτα αἱ μὲν ἀληθεῖς αἰεὶ, αἱ δὲ φαντασίαι γίνονται αἱ πλείους ψευδεῖς. ἔπειτ' οὐδὲ λέγομεν, ὅταν ἐνεργῶμεν ἀκριβῶς περὶ τὸ αἰσθητόν, ὅτι φαίνεται τοῦτο ἡμῖν ἀνθρωπος· ἀλλὰ μᾶλλον ὅταν μὴ ἐναργῶς αἰσθανώμεθα [τότε ἢ ἀληθὴς ἢ ψευδής]. καὶ ὅπερ δὲ 15 8 ἐλέγομεν πρότερον, φαίνεται καὶ μύουσιν ὁράματα. ἀλλὰ μὴν οὐδὲ τῶν αἰεὶ ἀληθεύοντων οὐδεμία ἔσται, οἷον ἐπιστήμη ἢ νοῦς· ἔστι γὰρ φαντασία καὶ ψευδής.λείπεται ἄρα ἰδεῖν εἰ δόξα· γίνεται γὰρ δόξα καὶ ἀληθὴς καὶ ψευδής. ἀλλὰ δόξῃ μὲν ἔπεται πίστις (οὐκ ἐνδέχεται γὰρ δοξάζοντα οἷς 20 δοκεῖ μὴ πιστεύειν), τῶν δὲ θηρίων οὐθενὶ ὑπάρχει πίστις,

27. τοῦ αἰσθ. E, sed nunc v eras. (Stapf.), τοῦ etiam Simpl. 221, 6 || 428 a, 1. ἢ om. W et pr. E, leg. Soph. || 2. γενέσθαι S T V X, ἐγγίνεσθαι W y Them. 89, 30 || 3. "negatio aut certe dubitatio in hac apodoti desideratur" Trend., ante μία addendum esse ζητῶμεν εἰ conī. Bywater, p. 56 || καθ' ἃς conī. Torst., καθ' ἣν etiam Philop. Soph. || καὶ] ἢ E S U W X, καὶ etiam Soph. || 4. ἢ] καὶ E S T U W, ἢ etiam Soph. || τοιαῦτα S V y, ταῦτα L W X, τοιαῦται etiam Them. Philop. || 5. νοῦς ἐπιστήμη S T U W X Philop., ἐπιστήμη νοῦς etiam Them. Simpl. Soph., ἐπιστήμην pr. E sed nunc v eras. (Rr.) || οὖν om. S U X, leg. Them. Soph. || 6. αἰσθησις μὲν...15. καὶ ὅπερ. Hunc locum restituere tentat Essen III, 21 || 6. μὲν om. y, leg. Soph. || 7. ante φαίνεται aliquid excidisse censet Freudenthal, p. 55 || τούτων ὑπάρχοντος S T U V W X Soph. || 8. legendum proponit Torst., Jahrb. f. Phil. 1867, p. 246: αἰσθησις μὲν αἰεὶ <τοῦ> παρόντος ἐστὶ, φαντασία δ' οὔ, quod improbat Freudenthal, qui pro αἰεὶ legi vult πᾶσι (quod probat Susemihl) et ὑπάρχει pro πάρεστι, p. 12 et Rhein. Mus. 1869, p. 400, utrique adversatur Schieboldt, De imag. disquis., p. 12, αἰσθησις μὲν ἢ δυνάμει αἰεὶ πάρεστι conī. Christ || 11. σκόληκι pr. E (Rr.) || Torst., Them. et Soph. secutus, scripsit: οἷον μύρμηκι μὲν ἢ μελίττῃ, σκώληκι δ' οὔ, quod etiam Belger in alt. ed. Trend. recepit et, omisso μὲν, Rodier, quibus assentitur Schieboldt, p. 9, ac profecto Them. ita legisse videtur,

To turn to thought: since it is different from sense-perception and seems to include imagination on the one hand and conception on the other, we must determine the nature of imagination before we proceed to discuss conception. If, then, 6 imagination is the faculty in virtue of which we say that an image presents itself to us, and if we exclude the metaphorical use of the term, it is some one of the faculties or habits in virtue of which we judge, and judge truly or falsely. Such faculties or habits are sensation, opinion, knowledge, intellect. It is clearly not 7 sensation, for the following reasons. Sensation is either a faculty like sight or an activity like seeing. But we may have an image even when neither the one nor the other is present: for example, the images in dreams. Again, sensation is always present, but not so imagination. Besides, the identity of the two in actuality would involve the possibility that all the brutes have imagination. But this apparently is not the case; for example, the ant, the bee and the grub do not possess it. Moreover, sensations are always true, but imaginings prove for the most part false. Further, it is not when we direct our energies closely to the sensible object, that we say that this object appears to us to be a man, but rather when we do not distinctly perceive it [*then the term true or false is applied*]. And, as we said before, visions present themselves even if we have our eyes closed.

Neither, again, can imagination be ranked with the faculties, 8 like knowledge or intellect, which always judge truly: it may also be false. It remains, then, to consider whether it be opinion, as opinion may be true or false. But opinion is attended by conviction, for it is impossible to hold opinions without being convinced of them: but no brute is ever convinced,

quamquam suspicionem movet vocabulum *ἵσως*, quod addidit 90, 8, et fort. Alex., qui scribit De An. 67, 2: καὶ αἰσθήσεως μὲν πάντα μετέχει τὰ ζῷα, φαντασίας δὲ οὐ δοκεῖ, ὡς τὰ τε ὀστρεώδη τῶν θαλασσιῶν καὶ οἱ σκώληκες, et Soph. alieno loco, p. 55, 27, haec verba habet: μύρμηξι καὶ μελίτταις καὶ τοῖς ὁμοίοις...ἀνάγκη παρεῖναι φαντασίαν..., σκώληκες δὲ καὶ μύλαι...ἣ οὐ δοκοῦσιν ὅλως ἔχειν ἢ ἀμυδράν τινα, similiter Philop. ad 413 b, 22. et ad 414 b, 33. (258, 32), hoc vero loco diserte vulgatam lectionem agnoscit et interpretatur, quare neque ex Philop. neque ex Soph. lectionem a Torst. receptam confirmari posse iudicat Biehl; vulgatam tumentur praeter omnes codd. etiam Simpl. hoc loco et p. 308, 19 et vet. transl. et Barco, p. 62; cf. ad hunc locum 434 a, 4 || 12. *ἐπειτ'* ἐτι T et corr. E, *ἐπειτα* leg. etiam Soph. || 14. *ἐνεργῶς* E, *ἐναργῶς* etiam Them. Soph. || 15. ἦ] om. pr. E, καὶ U, καὶ ἡ T y, καὶ ἡ SV || ἦ] καὶ ἡ SV || τότε ἡ ἀλ. ἡ ψ. unc. inclusit Torst., quod probat etiam Madvig, leg. Soph. et vet. transl. || δὴ STUVXY Soph. Bywater, p. 56 || 19. ἀλλὰ...24. δ' οὐ e duab. ed. contam. iudicat Torst., cui assentitur Freudenthal, Rhein. Mus. 1869, p. 405, pr. 22. *ἐτι πάσῃ*...24. δ' οὐ, post. 19. ἀλλὰ...22. πολλοῖς || 21. *δοκεῖ*] *δοξάζει* L U W Philop. 500, 20, *δοκεῖ* etiam Them. Soph.

φαντασία δ' ἐν πολλοῖς. ἔτι πάσῃ μὲν δόξῃ ἀκολουθεῖ πίστις, πίστει δὲ τὸ πεπεισθαι, πειθοῖ δὲ λόγος· τῶν δὲ θηρίων 9 ἐνίοις φαντασία μὲν ὑπάρχει, λόγος δ' οὐ. φανερόν τοίνυν ὅτι οὐδὲ δόξα μετ' αἰσθήσεως, οὐδὲ δι' αἰσθήσεως, οὐδὲ συμ- 25 πλοκὴ δόξης καὶ αἰσθήσεως φαντασία ἂν εἴη, διὰ τε ταῦτα καὶ δῆλον ὅτι οὐκ ἄλλου τινός ἐστιν ἢ δόξα, ἀλλ' ἐκείνου ἐστὶν οὐ καὶ ἡ αἴσθησις· λέγω δ', ἐκ τῆς τοῦ λευκοῦ δόξης καὶ αἰσθήσεως ἡ συμπλοκὴ φαντασία ἐστίν· οὐ γὰρ δὴ ἐκ τῆς δόξης μὲν τῆς τοῦ ἀγαθοῦ, αἰσθήσεως δὲ τῆς τοῦ 30 λευκοῦ· τὸ οὖν φαίνεσθαι ἐστὶ τὸ δοξάζειν ὅπερ αἰσθάνεται 428b

10 μὴ κατὰ συμβεβηκός. φαίνεται δὲ καὶ ψευδῇ, περὶ ὧν ἅμα ὑπόληψιν ἀληθῆ ἔχει, οἷον φαίνεται μὲν ὁ ἥλιος πο- διαῖος, πεπίστευται δ' εἶναι μείζων τῆς οἰκουμένης· συμβαίνει οὖν ἥτοι ἀποβεβληκέναι τὴν ἑαυτοῦ ἀληθῆ δόξαν, ἣν εἶχε, 5 σωζομένου τοῦ πράγματος, μὴ ἐπιλαθόμενον μηδὲ μεταπισ- σθέντα, ἢ εἰ ἔτι ἔχει, ἀνάγκη τὴν αὐτὴν ἀληθῆ εἶναι καὶ ψευδῇ. ἀλλὰ ψευδὴς ἐγένετο, ὅτε λάθοι μεταπεσὼν τὸ πρᾶγμα. οὐτ' ἄρα ἐν τι τούτων ἐστὶν οὐτ' ἐκ τούτων ἡ φαντασία.

11 ἀλλ' ἐπειδὴ ἔστι κινήθέντος τουδὶ κινεῖσθαι ἕτερον ὑπὸ 10 τούτου, ἢ δὲ φαντασία κίνησις τις δοκεῖ εἶναι καὶ οὐκ ἄνευ αἰσθήσεως γίνεσθαι ἀλλ' αἰσθανομένοις καὶ ὧν αἰσθησίς ἐστιν, ἔστι δὲ γίνεσθαι κίνησιν ὑπὸ τῆς ἐνεργείας τῆς αἰσθή- σεως, καὶ ταύτην ὁμοίαν ἀνάγκη εἶναι τῇ αἰσθήσει, εἴη ἂν αὕτη ἢ κίνησις οὔτε ἄνευ αἰσθήσεως ἐνδεχομένη οὔτε μὴ αἰ- 15 σθανομένοις ὑπάρχειν, καὶ πολλὰ κατ' αὐτὴν καὶ ποιεῖν καὶ πάσχειν τὸ ἔχον, καὶ εἶναι καὶ ἀληθῇ καὶ ψευδῇ.

22. δ' ἐν E L, δὲ ἐν Soph., ἐν om. reliqui ante Biehlium omnes || verba ἐτι...24. δ' οὐ unc. inclusit Biehl || *πάσῃ* || *εἰ πάσῃ* S X γ, *εἰ* insert. E<sub>3</sub> (Bhl.) || 26. ἡ φαντ. con. Torst. || *virgulam* post εἴη delevit, post 27. ταῦτα posuit Rodier, Simpl. 212, 12. 28 Philop. 504, 31 et Them. 90, 32 secutus. Idem Rodier dubitanter διὰ γε ταῦτα con. || *διὰ τε ταῦτα*...28. αἰσθησις ante 24. φανερόν poni vult G. Schneider, Rhein. Mus. 1866, p. 449 || 27. καὶ ὅτι (omisso δῆλον) vel καὶ ὅτι δῆλον ὅτι et ἔσται pro ἐστιν con. Shorey, p. 150 || *ἄλλη τις* S T V W, *ἄλλης γ*, *ἄλλου* etiam Them. Simpl. Soph. || ἡ om. S V X || 28. ἐκείνη S T, ἐκείνης γ, ἡ ἐκείνη Philop. || *ἐστίν* || *ἥπερ ἐστίν* S, *ἥσπερ ἐστίν* γ, *εἰπερ ἐστίν* T W Torst., *vulgatam* tuetur vet. transl. || *οὐ καὶ ἡ* || *οὐ καὶ* E L Bek. Trend., *καὶ ἡ γ*, *οὐπερ ἐστὶ καὶ ἡ* U V, *οὐ καὶ ἡ* S T W X, scripsit Torst., *οὐπερ ἐστίν*, *ὁμοῦ καὶ ἡ* Simpl. || *ἐκ* || *εἰ* V Trend. G. Schneider, *ὅτε ἐκ γ*, *vulgatam* tuetur vet. transl. || 29. ἡ συμπλοκὴ unc. incl. Torst. || 428 b, 1. ἔσται con. Trend., scripsit Torst., cui assentitur G. Schneider, *ἐστὶ* etiam Philop. et vet. transl. || 2. δὲ δὲ γε S T U V W X γ, fort. recte, iudice Biehlio || 3. ἔχειν E S || *ποδῖος* pr. E || 4. *πέπεισται* S T U X Torst., *πιστεύεται* L || *μείζων* L U W X Bek. Trend., *μείζω* E S T V γ Torst. Biehl Rodier || 5. *αὐτοῦ* E L || *ἀληθῇ* post *εἶχεν* S U W X ||

though many have imagination. Further, every opinion implies conviction, conviction implies that we have been persuaded, and persuasion implies reason. Among brutes, however, though some have imagination, none have reason. It is evident, then, that 9 imagination is neither opinion joined with sensation nor opinion through sensation, nor yet a complex of opinion and sensation, both on these grounds and because nothing else is the object of opinion but that which is the object of sensation: I mean, it is the complex of the opinion of white and the sensation of white, not surely of the opinion of good with the sensation of white, which alone could constitute imagination. To imagine, then, will be on this supposition to opine directly, not indirectly, that which we perceive. But there are false imagin- 10 ings concerning things of which we hold at the same time a true conception. For example, the sun appears only a foot in diameter, but we are convinced that it is larger than the inhabited world: in this case, therefore, either, without any alteration in the thing and without any lapse of memory on our part or conversion by argument, we have abandoned the true opinion which we had about it; or else, if we still retain it, the same opinion must be both true and false. It could have proved false only in the event of the object having changed without our observing it. It is not, then, either one of the two, opinion and sensation, singly, or a combination of the two, which constitutes imagination.

Now when one thing is moved, something else can be moved 11 by it. And imagination is thought to be a species of motion and not to arise apart from sensation, but only in sentient beings and with the objects of sense for its objects. Motion, again, may be produced by actual sensation, and such motion must resemble the sensation which caused it. From all this it follows that this particular motion cannot arise apart from sensation nor be found anywhere except in sentient beings: and in virtue of this motion it is possible for its possessor to do and experience many things: imagination, too, may be both true and

nor  
opinion  
combined  
with  
sensation.  
  
It is a  
movement  
subsidiary  
to sensa-  
tion.

6. ἐπιλανθάνμενον L T U V W X || 7. τὴν αὐτὴν om. pr. E, ante ἀνάγκη ponunt L W y || post εἶναι addendum πιστεύειν censet Essen III, p. 23 || 8. ἐγένετο E, sed in litura (Trend.), L S U V X y Torst., ἐγένετο reliqui ante Torst. omnes, etiam Sussemlh, B. J. XXX, 47 || ἀλλὰ...9. πρᾶγμα Torst. suspecta sunt, non legisse videntur Them. Simpl. Soph., leg. etiam Philop. || 9. οὐκ ἄρα E L T W y || 10. τοῦδε S U V y || 11. ad verba ἡ δὲ... 12. αἰσθήσεις ἐστὶν annotat Torst.: vereor ne, etsi sunt Aristotelis, in posteriore edit. non fuerint scripta, leg. etiam Simpl. Philop. || 12. αἰσθήσεις εἰσὶν T U V W et, omisso verbo, S, numerum singularem αἰσθήσεως leg. etiam Philop. 512, 24 Simpl. 215, 3 Soph. 119, 34 || 15. αὐτῆς E || 16. ὑπάρχει E || κατὰ ταύτην E L, κατ' αὐτὴν etiam Them. Simpl. Philop. Soph. || καὶ om. T V X y, tuentur etiam Them. Soph.

12 τοῦτο δὲ συμβαίνει διὰ τὰδε. ἡ αἴσθησις τῶν μὲν ἰδίων ἀληθῆς  
 ἐστὶν ἢ ὅτι ὀλίγιστον ἔχουσα τὸ ψεύδος. δεύτερον δὲ τοῦ  
 συμβεβηκέναι ταῦτα· καὶ ἐνταῦθα ἤδη ἐνδέχεται διαψεύ-  
 δεσθαι· ὅτι μὲν γὰρ λευκόν, οὐ ψεύδεται, εἰ δὲ τοῦτο τὸ λευ-  
 κὸν ἢ ἄλλο τι, ψεύδεται. τρίτον δὲ τῶν κοινῶν καὶ ἐπομένων  
 τοῖς συμβεβηκόσιν, οἷς ὑπάρχει τὰ ἴδια· λέγω δ' οἶον κί-  
 νησις καὶ μέγεθος, ἃ συμβέβηκε τοῖς αἰσθητοῖς, περὶ ἃ  
 13 μάλιστα ἤδη ἐστὶν ἀπατηθῆναι κατὰ τὴν αἴσθησιν. ἡ δὲ κί- 25  
 νησις ἢ ὑπὸ τῆς ἐνεργείας γινομένη διοίσει [τῆς αἰσθήσεως]  
 ἢ ἀπὸ τούτων τῶν τριῶν αἰσθήσεων. καὶ ἡ μὲν πρώτη πα-  
 ρούσης τῆς αἰσθήσεως ἀληθῆς, αἱ δ' ἕτεραι καὶ παρούσης καὶ  
 ἀπούσης εἶεν ἂν ψευδεῖς, καὶ μάλιστα ὅταν πόρρω τὸ αἰσθη-  
 τὸν ᾗ. εἰ οὖν μηθὲν μὲν ἄλλο ἔχει ἢ τὰ εἰρημένα ἢ φαν- 30  
 τασία, τοῦτο δ' ἐστὶ τὸ λεχθέν, ἡ φαντασία ἂν εἴη κίνησις 429a  
 14 ὑπὸ τῆς αἰσθήσεως τῆς κατ' ἐνέργειαν γινομένη. ἐπεὶ δ' ἡ  
 ὄψις μάλιστα αἰσθησίς ἐστι, καὶ τὸ ὄνομα ἀπὸ τοῦ φάους εἵ-  
 15 ληφεν, ὅτι ἄνευ φωτὸς οὐκ ἐστὶν ἰδεῖν. καὶ διὰ τὸ ἐμμένειν  
 καὶ ὁμοίας εἶναι ταῖς αἰσθήσεσι, πολλὰ κατ' αὐτὰς πράτ- 5  
 τει τὰ ζῶα, τὰ μὲν διὰ τὸ μὴ ἔχειν νοῦν, οἶον τὰ θηρία,  
 τὰ δὲ διὰ τὸ ἐπικαλύπτεσθαι τὸν νοῦν ἐνίοτε πάθει ἢ νόσοις  
 ἢ ὕπνῳ, οἶον οἱ ἄνθρωποι. περὶ μὲν οὖν φαντασίας, τί ἐστι  
 καὶ διὰ τί ἐστὶν, εἰρήσθω ἐπὶ τοσοῦτον.

19. τῷ συμβεβηκέναι ταῦτα E (recte Bus., sed τῷ sine ι adscript.), τοῦ συμβεβηκότος X, τοῦ ᾧ συμβέβηκε καὶ ταῦτα Ald. Sylb. Basil. et vet. transl., Them. interpretatur: δεύτερον δὲ τῶν ὑποκειμένων τοῖς ἰδίοις καὶ οἷς ἐκεῖνα συμβέβηκε, ex Simpl. et Philop. interpr. colligit Biehl, eos legisse aut τοῦ συμβεβηκότος aut τοῦ δ συμβέβηκε τοῦτοις, quod scriptum esse ab Arist. conii. Torst., pro ταῦτα conii. τούτῳ Steinhart, fort. legendum ταῦτα τούτῳ censet Rodier || 20. v. ad b, 24 || διαψεύσασθαι E, διαψεύδεσθαι etiam Them. || 21. τὸ om. E S V X, leg. Philop. || 22. τι et 24. ἃ ante συμβ. om. S T U V W X || 23. τοῖς...ἴδια unc. incl. Essen III, p. 25, οἷς...ἴδια delenda censet Maier, Syllogistik des Arist., p. 9 in adn., Simpl. et Philop. videntur legisse καὶ τὰ ἴδια, fort. οἷς...τὰ ἴδια non leg. Them. || 24. ἃ...αἰσθητοῖς unc. inclusit Torst., post 20. ταῦτα transponenda censet Bywater, p. 58, cui assentitur Susemihl, B. J. LXVII, 109, in parenth. posuit Rodier || 25. δὲ] δὴ T U Rodier, δ' ἢ W || 26. τῶν αἰσθήσεων T, τῆς αἰσθήσεως unc. inclusit Torst., fort. transponendum esse post ἐνεργείας putat Biehl, et iam idem G. Schneider suaserat; etiam facilius post γινομένην traici posse censet Susemihl, Oecon. p. 86 || 27. ἡ...αἰσθήσεων om. S U V W, leg. etiam Philop., pro ἡ sine ullo cod. scripserunt τῆς Bek. et Trend., ἡ conii. Christ, ἡ delendum censet G. Schneider, Zeitschr. f. Gym. 1867, p. 631 || 29. αἰσθητήριον T U V W X || 30. μὲν om. S T U V W X Philop. || ἔχει ἢ E, recepit Biehl, ἔχει Ly et Philop. cod. D, ἔχει, omisso ἢ, reliqui omnes, etiam Torst. Zeller Rodier || Nescio an ἢ τὰ εἰρημένα unc. includenda sint, nisi forte, deserto cod. E, totus locus ita est purgandus: εἰ οὖν μηθὲν ἄλλο ἔχει τὰ εἰρημένα [ἢ φαντασία, τοῦτο δ' ἐστὶ τὸ λεχθέν], ἡ φαντασία ἂν εἴη κτῆ. ||

false. The reasons for the last conclusion are as follows. Perception <sup>12</sup> of the objects of the special senses is true, or subject to the minimum of error. Next comes the perception that they are attributes: and at this point error may come in. As to the whiteness of an object sense is never mistaken, but it may be mistaken as to whether the white object is this thing or something else. Thirdly, there is perception of the common attributes, that is, the concomitants of the things to which the special attributes belong: I mean, for example, motion and magnitude, which are attributes of sensibles. And it is concerning them that sense is most apt to be deceived. But the motion which is the result of actual <sup>13</sup> sensation will be different according as it arises from one or other of these three kinds of perception. The first kind, so long as the sensation is present, is true: the other kinds may be false, whether the sensation is present or absent, and especially when the object perceived is a long way off. If then, imagination possesses no other characteristics than the aforesaid, and if it is what <sup>14</sup> it has been described to be, imagination will be a motion generated by actual perception. And, since sight is the <sup>15</sup> principal sense, imagination has derived even its name (*φαντασία*) from light (*φάος*), because without light one cannot see. Again, <sup>15</sup> because imaginations remain in us and resemble the corresponding sensations, animals perform many actions under their influence; some, that is, the brutes, through not having intellect, and others, that is, men, because intellect is sometimes obscured by passion or disease or sleep. Let this account of the nature and cause of imagination suffice.

Imagi-  
nation  
defined.

η] solus E, η LSTUVXY, η η W Rodier, "si igitur nihil aliud habet ea quae dicta sunt quam phantasia" vet. transl., η μὴ Bek. Trend., secuti edit. Sylburgianam, vel potius eiusdem tythetatarum errorem, η η φαντασία unc. incl. Torst., non legisse Philop. 514, 32 idem Torst. censet || φαντασίαν S Bek. Trend.; scriptum fuisse ab Arist.: *ei οὖν μηθὲν μὲν ἄλλο ἔχει τὰ εἰρημένα, τοῦτο δ' ἔχει, ἡ φαντασία ἂν εἴη κίνησις* coni. Torst. || 429a, 1. τοῦτο δ' ἔστι Biehl, etiam Them. 93, 22 || ταὐτὸ δ' ἔστι sive ταὐτὸ δ' ἔχει coni. Christ || 2. γιγνομένη pr. E (Trend.) Ly Them. Philop. Simpl. vet. transl. Trend. Torst., quod etiam probat Zeller, p. 545, γιγνομένης reliqui codd., etiam Bek. || 3. ἐστι om. STUVWX || 5. ὁμοίως E, sed as in rasura (Bhl.), TUX Them. Simpl. vet. transl. Torst., ὁμοίως reliqui ante Torst. omnes || κατὰ ταύτας E Ly, κατ' αὐτὰς etiam Them. Simpl. || πράττειν E || 7. νόσω TUV, νόσοις etiam Them. Simpl. 221, 12 || 9. διότι E Soph. 121, 20.

4 Περὶ δὲ τοῦ μορίου τοῦ τῆς ψυχῆς ᾧ γινώσκει τε ἡ 10  
 ψυχὴ καὶ φρονεῖ, εἴτε χωριστοῦ ὄντος εἴτε καὶ μὴ χωριστοῦ  
 κατὰ μέγεθος ἀλλὰ κατὰ λόγον, σκεπτέον τίν' ἔχει δια-  
 2 φοράν, καὶ πῶς ποτὲ γίνεται τὸ νοεῖν. εἰ δὴ ἐστὶ τὸ νοεῖν  
 ὥσπερ τὸ αἰσθάνεσθαι, ἡ πάσχειν τι ἂν εἴη ὑπὸ τοῦ νοητοῦ ἢ  
 3 τι τοιοῦτον ἕτερον. ἀπαθὲς ἄρα δεῖ εἶναι, δεκτικὸν δὲ τοῦ εἶ- 15  
 δους καὶ δυνάμει τοιοῦτον ἀλλὰ μὴ τοῦτο, καὶ ὁμοίως ἔχειν,  
 ὥσπερ τὸ αἰσθητικὸν πρὸς τὰ αἰσθητά, οὕτω τὸν νοῦν πρὸς  
 τὰ νοητά. ἀνάγκη ἄρα, ἐπεὶ πάντα νοεῖ, ἀμιγῆ εἶναι, ὥσ-  
 περ φησὶν Ἀναξαγόρας, ἵνα κρατῇ, τοῦτο δ' ἐστὶν ἵνα γνω-  
 ρίζῃ· παρεμφαινόμενον γὰρ κωλύει τὸ ἀλλότριον καὶ ἀντι- 20  
 φράττει· ὥστε μὴδ' αὐτοῦ εἶναι φύσιν μηδεμίαν ἀλλ' ἢ  
 ταύτην, ὅτι δυνατόν. ὁ ἄρα καλούμενος τῆς ψυχῆς νοῦς  
 (λέγω δὲ νοῦν ᾧ διανοεῖται καὶ ὑπολαμβάνει ἢ ψυχὴν)  
 4 οὐθέν ἐστιν ἐνεργεία τῶν ὄντων πρὶν νοεῖν. διὸ οὐδὲ μεμεῖχθαι  
 εὐλογον αὐτὸν τῷ σώματι· ποιός τις γὰρ ἂν γίγνοιτο, ἢ ψυ- 25  
 χρὸς ἢ θερμός, ἢ καὶ ὄργανόν τι εἴη, ὥσπερ τῷ αἰσθητικῷ·  
 νῦν δ' οὐθέν ἐστιν. καὶ εἰ δὴ οἱ λέγοντες τὴν ψυχὴν εἶναι τό-  
 πον εἰδῶν, πλὴν ὅτι οὔτε ὅλη ἀλλ' ἢ νοητικὴ, οὔτε ἐντελε-  
 5 χεῖα ἀλλὰ δυνάμει τὰ εἶδη. ὅτι δ' οὐχ ὁμοία ἢ ἀπάθεια  
 τοῦ αἰσθητικοῦ καὶ τοῦ νοητικοῦ, φανερόν ἐπὶ τῶν αἰσθητηρίων 30  
 καὶ τῆς αἰσθήσεως. ἡ μὲν γὰρ αἰσθησις οὐ δύναται αἰσθάνε-  
 σθαι ἐκ τοῦ σφόδρα αἰσθητοῦ, οἷον ψόφου ἐκ τῶν μεγάλων 429b  
 ψόφων, οὐδ' ἐκ τῶν ἰσχυρῶν χρωμάτων καὶ ὁσμῶν οὔτε  
 ὁρᾶν οὔτε ὁσμᾶσθαι· ἀλλ' ὁ νοῦς ὅταν τι νοήσῃ σφόδρα νοη-  
 τόν, οὐχ ἥττον νοεῖ τὰ ὑποδεέστερα, ἀλλὰ καὶ μᾶλλον· τὸ  
 6 μὲν γὰρ αἰσθητικὸν οὐκ ἄνευ σώματος, ὁ δὲ χωριστός. ὅταν 5  
 δ' οὕτως ἕκαστα γένηται ὡς ὁ ἐπιστήμων λέγεται ὁ κατ' ἐνέρ-  
 γειαν (τοῦτο δὲ συμβαίνει, ὅταν δύνῃται ἐνεργεῖν δι' αὐτοῦ),

10. τοῦ ante τῆς om. L S T U W X Philop., τοῦ τῆς ψυχ. μορίου y, leg. τοῦ Them. ||  
 11. καὶ post εἴτε om. E (Bus.) et Simpl. || 14. τι ὅτι E L, τι leg. Philop. Soph. Simpl., hoc  
 loco et p. 264, 17 || 15. ἄρα tuentur omnes codd. et Them. Simpl. Philop. || 18. ἀνάγκη...  
 27. οὐθέν ἐστιν e duab. rec. contam. iudicat Torst., pr. 22. ὁ ἀρα...27. ἐστιν, post.  
 18. ἀνάγκη...22. δυνατόν, quod negant Noetel, Ztschr. f. Gymn. 1864, p. 140 et  
 Dittenberger, Götting. gelehrte Anzeigen 1863, p. 1610 || 18. ἐπειδὴ S U V W X y  
 Them. || 20. κωλύσει coni. Essen, Beitr. z. Lös., p. 44, scripsit H. Jackson, Texts to  
 illustrate, p. 93 || ἀντιφράζει SVX, ἀντιφράξει U Wy Essen H. Jackson, ἀντιφράττει  
 leg. etiam Soph. || 25. γὰρ ἂν τις L S T U V W X, ποίος τις ἂν γίγνοιτο Soph. || ἢ ψ. ἢ θ.  
 E, θ. ἢ ψ. S T U V W X Philop., ἢ θ. ἢ ψ. y, ψυχρὸς ἢ θερμός Soph. Bek. Trend. Torst. ||



As to the part of the soul with which it knows and under-<sup>4</sup>  
 stands, whether such part be separable spatially, or not  
 Intellect or Mind. separable spatially, but only in thought, we have to con-  
 sider what is its distinctive character and how thinking comes about.  
 Now, if thinking is analogous to perceiving, it will consist in a<sup>2</sup>  
 being acted upon by the object of thought or in something else of  
 this kind. This part of the soul, then, must be impassive, but recep-<sup>3</sup>  
 tive of the form and potentially like this form, though not identical  
 with it: and, as the faculty of sense is to sensible objects, so must  
 intellect be related to intelligible objects. The mind, then, since  
 it thinks all things, must needs, in the words of Anaxagoras, be  
 unmixed with any, if it is to rule, that is, to know. For by  
 intruding its own form it hinders and obstructs that which is  
 alien to it; hence it has no other nature than this, that it is a  
 capacity. Thus, then, the part of the soul which we call  
 A poten- intellect (and by intellect I mean that whereby the soul  
 tiality: "the place  
 of forms." thinks and conceives) is nothing at all actually before  
 it thinks. Hence, too, we cannot reasonably conceive it to be<sup>4</sup>  
 mixed with the body: for in that case it would acquire some par-  
 ticular quality, cold or heat, or would even have some organ, as the  
 perceptive faculty has. But as a matter of fact it has none. There-  
 fore it has been well said that the soul is a place of forms or ideas:  
 except that this is not true of the whole soul, but only of the soul  
 which can think, and again that the forms are there not in actuality,  
 but potentially. But that the impassivity of sense is different from<sup>5</sup>  
 that of intellect is clear if we look at the sense-organs and at  
 sense. The sense loses its power to perceive, if the sensible object  
 has been too intense: thus it cannot hear sound after very loud  
 noises, and after too powerful colours and odours it can neither  
 see nor smell. But the intellect, when it has been thinking on  
 an object of intense thought, is not less, but even more, able to  
 think of inferior objects. For the perceptive faculty is not in-  
 dependent of body, whereas intellect is separable. But when the<sup>6</sup>  
 intellect has thus become everything in the sense in  
 In habitu. which one who actually is a scholar is said to be so (which  
 happens so soon as he can exercise his power of himself), even

26. ἡ κἄν] καὶ κἄν S, κἄν T W Soph. Susemihl, Oecon. p. 86, καὶ U V X || 29. ὅτι δ ... 30. νοητικοῦ unc. incl. Essen III, p. 38 || 429 b, 1. οἶον τοῦ ψ. S T V X y, οἶον ἐκ τοῦ ψ. E, ἐκ τοῦ ψόφου τοῦ μεγάλου [ἡ] τῶν μικρῶν ψόφων Them. 104, 34 || ἐκ om. E, οἶον ψόφου ἐκ τῶν μεγ. ψ. etiam Soph. || 4. verba ἀλλὰ καὶ μᾶλλον interpolata esse censet Torst., Jahrb. f. Phil. 1867, p. 246, leg. etiam Them. || 5. ὁ δὲ νοῦς χωρ. y et in interpr. Soph., om. νοῦς etiam Them. 105, 4 || 6. ὁ post ὡς om. S W Theoph. ap. Prisc. 31, 8 Bek. Trend. || ὁ ante κατ' om. S U V W X Theoph. ap. Prisc. 31, 9.

ἔστι μὲν καὶ τότε δυνάμει πως, οὐ μὴν ὁμοίως καὶ πρὶν  
μαθεῖν ἢ εὐρεῖν· καὶ αὐτὸς δὲ αὐτὸν τότε δύναται νοεῖν.

7 ἐπεὶ δ' ἄλλο ἐστὶ τὸ μέγεθος καὶ τὸ μεγέθει εἶναι καὶ 10  
ὑδωρ καὶ ὑδατι εἶναι (οὕτω δὲ καὶ ἐφ' ἑτέρων πολλῶν, ἀλλ'  
οὐκ ἐπὶ πάντων· ἐπ' ἐνίων γὰρ ταυτόν ἐστι), τὸ σαρκὶ εἶναι  
καὶ σάρκα [καὶ] ἢ ἄλλῳ ἢ ἄλλως ἔχοντι κρίνει· ἢ γὰρ σὰρξ  
οὐκ ἄνευ τῆς ὕλης, ἀλλ' ὥσπερ τὸ σιμόν, τόδε ἐν τῷδε. τῷ  
μὲν οὖν αἰσθητικῷ τὸ θερμὸν καὶ τὸ ψυχρὸν κρίνει, καὶ ὧν 15  
λόγος τις ἢ σὰρξ· ἄλλῳ δὲ ἦτοι χωριστῷ ἢ ὡς ἢ κεκλα-  
σμένη ἔχει πρὸς αὐτὴν ὅταν ἐκταθῇ, τὸ σαρκὶ εἶναι κρί-  
8 νει. πάλιν δ' ἐπὶ τῶν ἐν ἀφαιρέσει ὄντων τὸ εὐθὺ ὡς τὸ  
σιμόν· μετὰ συνεχούς γάρ· τὸ δὲ τί ἦν εἶναι, εἰ ἔστιν ἕτερον  
τὸ εὐθεῖ εἶναι καὶ τὸ εὐθύ, ἄλλο· ἔστω γὰρ δυνάς. ἐτέρῳ 20  
ἄρα ἢ ἐτέρως ἔχοντι κρίνει. καὶ ὅλως ἄρα ὡς χωριστὰ τὰ  
9 πράγματα τῆς ὕλης, οὕτω καὶ τὰ περὶ τὸν νοῦν. ἀπορήσειε  
δ' ἂν τις, εἰ ὁ νοῦς ἀπλοῦν ἐστὶ καὶ ἀπαθὲς καὶ μηθενὶ  
μηθὲν ἔχει κοινόν, ὥσπερ φησὶν Ἀναξαγόρας, πῶς νοήσει, εἰ τὸ  
νοεῖν πάσχειν τί ἐστιν. ἢ γάρ τι κοινὸν ἀμφόιν ὑπάρχει, τὸ 25  
10 μὲν ποιεῖν δοκεῖ τὸ δὲ πάσχειν. ἔτι δ' εἰ νοητὸς καὶ αὐτός.  
ἢ γὰρ τοῖς ἄλλοις νοῦς ὑπάρξει, εἰ μὴ κατ' ἄλλο αὐτὸς  
νοητός, ἐν δέ τι τὸ νοητὸν εἶδει, ἢ μεμειγμένον τι ἕξει, ὃ  
11 ποιεῖ νοητὸν αὐτὸν ὥσπερ τὰλλα. ἢ τὸ μὲν πάσχειν κατὰ

8. μὲν] μὲν οὖν LW Theoph. l. l. 31, 10 Them. || καὶ τότε E m. pr. γ Them. Philop. Torst., καὶ τότε ὁμοίως insert. E<sub>2</sub> (Rr.), ὁμοίως καὶ τότε reliqui ante Torst. omnes || ὁμοίως om. SUX, leg. Them. Simpl. Theoph. l. l. 31, 11 || 9. ἢ] καὶ Theoph. l. l. || δὲ αὐτὸν] δι' αὐτοῦ coni. Bywater, J. of Philol. XIV, p. 40, cui assentitur Susemihl, Oecon., p. 86 || 11. καὶ τὸ ὑδατι E, sed τὸ expunct. (Stapf.), τὸ om. reliqui omnes || οὕτω δὲ...12. ταυτόν ἐστι in parenth. Bon., Stud. Arist. IV, 376 || 11. οὕτω δὲ om. LT, leg. Them. || 12. ταυτό E (Trend.) || colon post ἐστὶ omisum post 13. σάρκα ponit Bek., corr. Trend., iam Them. hunc locum recte interpretatus est 96, 6 sqq. || 13. καὶ ἢ ἄλλῳ solus E, receperunt Biehl Rodier, καὶ ἄλλῳ γ, ἢ ἄλλῳ, omissio καὶ, reliqui || ἔχοντι om. LSU V, leg. Them. Simpl. Philop. Soph. et insert. E<sub>2</sub> || κρίνει ὁ νοῦς L et E, sed ὁ νοῦς exp. (Bhl.) || 14. virgulam post σιμόν a Bek. Trend. omisam ponunt Torst. Bon. || 15. αἰσθητῷ pro αἰσθητικῷ legi vult Brentano, p. 134 || τὸ ante ψυχρ. om. EL || 16. ὁ λόγος E, ὁ om. etiam Simpl. Philop. || 17. αὐτὸν γ et E (Trend.) || εἶναι καὶ κρίνει LS, καὶ om. etiam Simpl. || 19. εἰ...20. εὐθύ unc. incl. Essen III, 40 || 20. virgulam post εὐθύ om. Bek., corr. Trend. || ἄλλο TVX et Bon. l. l., ἄλλῳ reliqui ante Bon. omnes, quod defendere studet Torst., Jahrb. f. Phil. 1867, p. 245 || 21. καὶ om. LSTUVX et, ut videtur, Philop. 532, 12 || ἄρα om. pr. E, leg. etiam Philop. || 23. ἀπαθὲς pr. E (Bus.), verba καὶ ἀπαθὲς in interpr. ignorare videtur Them. 97, 8 sq., delenda esse censet Hayduck, progr. Gryphisv. 1873, p. 4, cui assentitur Susemihl, Phil. Anzeig. 1873, p. 683, pro ἀπαθὲς coni. ἀμυγῆς Zeller, p. 568 || 24. ἐχων

then it is still in one sense but a capacity: not, however, a capacity in the same sense as before it learned or discovered. And, moreover, at this stage intellect is capable of thinking itself.

Now, since magnitude is not the same as the quiddity of 7  
 magnitude, nor water the same as the quiddity of water  
 (and so also of many other things, though not of all, the  
 thing and its quiddity being in some cases the same),  
 we judge the quiddity of flesh and flesh itself either with  
 different instruments or with the same instrument in different  
 relations. For flesh is never found apart from matter, but, like  
 "snub-nosed," it is a particular form in a particular matter. It is,  
 then, with the faculty of sense that we discriminate heat and cold  
 and all those qualities of which flesh is a certain proportion. But it  
 is with another faculty, either separate from sense, or related to it as  
 the bent line when it is straightened out is related to its former self,  
 that we discriminate the quiddity of flesh. Again, when we come 8  
 to the abstractions of mathematics, the straight answers to the  
 quality "snub-nosed," being never found apart from extension. But  
 the straightness of that which is straight, always supposing that the  
 straight is not the same as straightness, is something distinct: we  
 may, for instance, assume the definition of straightness to be  
 duality. It is, then, with another instrument or with the same  
 instrument in another relation that we judge it. In general, there-  
 fore, to the separation of the things from their matter corresponds  
 a difference in the operations of the intellect.

The question might arise: assuming that the mind is something 9  
 simple and impassive and, in the words of Anaxagoras,  
 has nothing in common with anything else, how will it  
 think, if to think is to be acted upon? For it is in  
 so far as two things have something in common that the one of  
 them is supposed to act and the other to be acted upon. Again, 10  
 can mind itself be its own object? For then either its other objects  
 will have mind in them, if it is not through something else, but in  
 itself, that mind is capable of being thought, and if to be so capable  
 is everywhere specifically one and the same; or else the mind will  
 have some ingredient in its composition which makes it, like the rest,  
 an object of thought. Or shall we recall our old distinction between 11  
 two meanings of the phrase "to be acted upon" in virtue of a

How the  
form or  
quiddity  
is appre-  
hended.

Some  
difficul-  
ties con-  
sidered.

κοινόν τι διήρηται πρότερον, ὅτι δυνάμει πώς ἐστὶ τὰ νοητὰ 30  
 ὁ νοῦς, ἀλλ' ἐντελεχεία οὐδέν, πρὶν ἂν νοῇ· <δυνάμει> δ' οὕτως  
 ὥσπερ ἐν γραμματείῳ ᾧ μὴθὲν ὑπάρχει ἐντελεχεία γεγραμ- 430a  
 12 μένον· ὅπερ συμβαίνει ἐπὶ τοῦ νοῦ. καὶ αὐτὸς δὲ νοητὸς ἐστὶν  
 ὥσπερ τὰ νοητά. ἐπὶ μὲν γὰρ τῶν ἄνευ ὕλης τὸ αὐτό ἐστὶ  
 τὸ νοοῦν καὶ τὸ νοούμενον· ἡ γὰρ ἐπιστήμη ἢ θεωρητικὴ καὶ  
 τὸ οὕτως ἐπιστητὸν τὸ αὐτό ἐστὶν. τοῦ δὲ μὴ αἰεὶ νοεῖν τὸ 5  
 αἴτιον ἐπισκεπτέον. ἐν δὲ τοῖς ἔχουσιν ὕλην δυνάμει ἑκαστόν  
 ἐστὶ τῶν νοητῶν. ὥστ' ἐκείνοις μὲν οὐχ ὑπάρξει νοῦς (ἄνευ  
 γὰρ ὕλης δύναμις ὁ νοῦς τῶν τοιούτων), ἐκείνῳ δὲ τὸ νοη-  
 τὸν ὑπάρξει.

5 Ἐπεὶ δ' ὥσπερ ἐν ἀπάσῃ τῇ φύσει ἐστὶ τι τὸ μὲν ὕλη 10  
 ἑκάστῳ γένει (τοῦτο δὲ ὁ πάντα δυνάμει ἐκεῖνα), ἕτερον δὲ  
 τὸ αἴτιον καὶ ποιητικόν, τῷ ποιεῖν πάντα, οἷον ἡ τέχνη  
 πρὸς τὴν ὕλην πέπονθεν, ἀνάγκη καὶ ἐν τῇ ψυχῇ ὑπάρχειν  
 ταύτας τὰς διαφοράς. καὶ ἐστὶν ὁ μὲν τοιοῦτος νοῦς τῷ πάντα  
 γίνεσθαι, ὁ δὲ τῷ πάντα ποιεῖν, ὡς ἕξις τις, οἷον τὸ φῶς· 15  
 τρόπον γὰρ τινα καὶ τὸ φῶς ποιεῖ τὰ δυνάμει ὄντα χρώ-  
 ματα ἐνεργεῖα χρώματα. καὶ οὗτος ὁ νοῦς χωριστὸς καὶ  
 2 ἀπαθὴς καὶ ἀμιγής, τῇ οὐσίᾳ ᾧ ἐνέργεια. αἰεὶ γὰρ τιμιώτε-  
 ρον τὸ ποιοῦν τοῦ πάσχοντος καὶ ἡ ἀρχὴ τῆς ὕλης. τὸ δ'  
 αὐτό ἐστὶν ἡ κατ' ἐνέργειαν ἐπιστήμη τῷ πράγματι· ἡ δὲ 20  
 κατὰ δύνάμιν χρόνῳ προτέρα ἐν τῷ ἐνί, ὅλως δὲ οὐ χρόνῳ·  
 ἀλλ' οὐχ ὅτε μὲν νοεῖ ὅτε δ' οὐ νοεῖ. χωρισθεῖς δ' ἐστὶ μόνον  
 τοῦθ' ὅπερ ἐστὶ, καὶ τοῦτο μόνον ἀθάνατον καὶ αἰδίδιον. οὐ

30. puncto post κοινόν τι posito, pro διήρηται leg. διδ' εἴρηται Ald., quam secutus est Wallace || 31. ἂν] ἂν μὴ LVW et inter versus UX, ἂν insert. E<sub>2</sub>, πρὶν νοεῖν Simpl. Prisc. 35, 33, πρὶν ἂν νοῇ etiam Them. || post νοῇ vulg. punctum || δυνάμει coni. Cornford, δεῖ reliqui et scripti et impressi omnes || post οὕτως excidisse ὑπολαβεῖν coni. Torst. || 430a, 1. ζ om. ESUVXY et vet. transl. || ὑπάρχειν SUVX || καταγεγραμμένον L et E, sed κατα expunct. (Bhl.), γεγραμ. etiam Them. || 2. post γεγραμμένον punctum Bek. Trend., colon posuit Torst., sustulit Rodier || 4. ἡ ante θε. om. E, leg. Them. Simpl. || 6. μόνον ἑκαστον y Ald. Sylb. || 8. δύναμις ἐστὶν ὁ LSUVWX || 10. ἐπει-  
 δὴ coni. Essen III, p. 43, cui assentitur Susemihl, Phil. Woch. 1893, p. 1321 || πάσῃ Ty Theoph. ap. Them. 108, 20 Simpl. 240, 1 in lemmate, cf. tamen 241, 27, ἀπάσῃ etiam Philop. 539, 13 Them. 103, 1 Soph. 125, 15 || 11. δ] ὅτι UVX, om. y, δ etiam Soph. || ἐκείνο E, ο in α mutat. E<sub>2</sub> (Bhl.), ἐκεῖνα etiam Philop. Soph. || 12. καὶ τὸ π. LW || τῷ δ τῷ LTX || 17. οὗτος] οὐχ ὡς S || 18. ἀμιγής καὶ ἀπαθής STUVWX y Philop., ἀπαθ. καὶ ἀμιγής E Them. Simpl. || ἐνέργεια ex Simpl. restituit Torst., idem habent etiam Simpl. cod. Marcianus A in Phys. 1162, 3 Theoph. ap. Prisc. 28, 12, 29, 25 Bon., Ind. Ar. 491 b 4, ἐνεργεῖα omnes codd., etiam Them. 106, 5 Philop. Soph. || 19. τὸ δ' αὐτό... 21. δὲ οὐ χρόνῳ

common element," and say that the mind is in a manner potentially all objects of thought, but is actually none of them until it thinks: potentially in the same sense as in a tablet which has nothing actually written upon it the writing exists potentially? This is exactly the case with the mind. Moreover, the mind itself <sup>12</sup> is included among the objects which can be thought. For where the objects are immaterial that which thinks and that which is thought are identical. Speculative knowledge and its object are identical. (We must, however, enquire why we do not think always.) On the other hand, in things containing matter each of the objects of thought is present potentially. Consequently material objects will not have mind in them, for the mind is the power of becoming such objects without their matter; whereas the mind will have the attribute of being its own object.

But since, as in the whole of nature, to something which serves <sup>5</sup>

Intellect  
passive  
and active.

as matter for each kind (and this is potentially all the members of the kind) there corresponds something else which is the cause or agent because it makes them all, the two being related to one another as art to its material, of necessity these differences must be found also in the soul. And to the one intellect, which answers to this description because it becomes all things, corresponds the other because it makes all things, like a sort of definite quality such as light. For in a manner light, too, converts colours which are potential into actual colours. And it is this intellect which is separable and impassive and unmixed, being in its essential nature an activity. For that which acts is always superior to that which is acted upon, <sup>2</sup> the cause or principle to the matter. Now actual knowledge is identical with the thing known, but potential knowledge is prior in time in the individual; and yet not universally prior in time. But this intellect has no intermittence in its thought. It is, however, only when separated that it is its true self, and this, its essential nature, alone is immortal and eternal. But we do not

alieno loco posita esse iudicant Kampe, p. 282 Bruno Keil, Analect. Isocrat. spec., p. 52 Susemihl, Phil. Woch. 1884, p. 784: cf. Alex. ap. Philop. 558, 5 sqq. || 19. τὸ δ' αὐτὸ E L, etiam Soph., αὐτὸ δ' reliqui codd. || 21. οὐ E Philop. Bek. Trend., οὐδὲ insert. E<sub>2</sub> (Rr.) et reliqui codd. Soph. Torst. (cui assentitur etiam Zeller, p. 571) Rodier, οὐδὲ ἐν Them. 101, 23, 28 || post χρόνῳ virgulam poni vult Zeller, p. 572 in adn., posuit Rodier || 22. οὐχ om. Wy Plut. ap. Philop. 535, 13 Simpl. 245, 34 et 263, 8 Soph. Torst. Kampe, p. 282 Susemihl, Phil. Anz. 1873, p. 690, Oecon., p. 86 Siebeck, Gesch. d. Psych. I, 2, p. 64, οὐχ leg. Them. 101, 24 et 99, 35 Philop. et ap. Philop. Alex. Plotinus Marinus vet. transl., retineri malunt etiam Zeller, p. 571 Brentano, p. 182 Schlottmann, das Vergängliche und Unverg. in der Seele nach Arist., p. 43 || 23. ἀττικὸν καὶ ἀθάνατον W, ἀθάνατον καὶ ἀττικὸν etiam Them. Simpl. Philop. Soph.

μνημονεύομεν δέ, ὅτι τοῦτο μὲν ἀπαθές, ὁ δὲ παθητικὸς  
νοὺς φθαρτός, καὶ ἄνευ τούτου οὐθὲν νοεῖ.

25

6 Ἡ μὲν οὖν τῶν ἀδιαιρέτων νόησις ἐν τούτοις, περὶ ἃ οὐκ  
ἔστι τὸ ψεῦδος. ἐν οἷς δὲ καὶ τὸ ψεῦδος καὶ τὸ ἀληθές, σύν-  
θεσίς τις ἤδη νοημάτων ὥσπερ ἐν ὄντων, καθάπερ Ἐμπεδο-  
κλῆς ἔφη “ἡ πολλῶν μὲν κόρσαι ἀναύχενες ἐβλάστησαν,”  
ἔπειτα συντίθεσθαι τῇ φιλίᾳ, οὕτω καὶ ταῦτα κεχωρισμένα 30  
2 συντίθεται, οἷον τὸ ἀσύμμετρον καὶ ἡ διάμετρος· ἂν δὲ γενο-  
μένων ἢ ἐσομένων, τὸν χρόνον προσενοῶν καὶ συντιθείς. τὸ 430b  
γὰρ ψεῦδος ἐν συνθέσει αἰεί· καὶ γὰρ ἂν τὸ λευκὸν μὴ  
λευκόν, τὸ μὴ λευκὸν συνέθηκεν. ἐνδέχεται δὲ καὶ διαίρεσιν  
φάναι πάντα. ἀλλ’ οὖν ἔστι γε οὐ μόνον τὸ ψεῦδος ἢ ἀλη-  
θές, ὅτι λευκὸς Κλέων ἐστίν, ἀλλὰ καὶ ὅτι ἦν ἢ ἔσται. τὸ δὲ ἐν 5  
3 ποιοῦν, τοῦτο ὁ νοὺς ἕκαστον. τὸ δ’ ἀδιαίρετον ἐπεὶ διχῶς, ἢ  
δυνάμει ἢ ἐνεργείᾳ, οὐθὲν κωλύει νοεῖν τὸ ἀδιαίρετον, ὅταν  
νοῇ τὸ μῆκος (ἀδιαίρετον γὰρ ἐνεργείᾳ), καὶ ἐν χρόνῳ ἀδιαι-  
ρέτῳ· ὁμοίως γὰρ ὁ χρόνος διαιρετὸς καὶ ἀδιαίρετος τῷ  
μήκει. οὐκ οὖν ἔστιν εἰπεῖν ἐν τῷ ἡμίσει τί ἐννοεῖ ἐκατέρῳ· 10  
οὐ γάρ ἐστιν, ἂν μὴ διαιρεθῇ, ἀλλ’ ἢ δυνάμει. χωρὶς δ’  
ἐκάτερον νοῶν τῶν ἡμίσεων διαιρεῖ καὶ τὸν χρόνον ἅμα· τότε  
δ’ οἰονεῖ μῆκη. εἰ δ’ ὥς ἐξ ἀμφοῖν, καὶ ἐν τῷ χρόνῳ τῷ  
4 ἐπ’ ἀμφοῖν. τὸ δὲ μὴ κατὰ ποσὸν ἀδιαίρετον ἀλλὰ τῷ εἶ-

24. μνημονεύομεν...431 b, 16. ἐκεῖνα desunt E, folio exciso inter folia 200 et 201 ||  
27. καὶ om. L || ψεῦδος ἤδη καὶ STUVWXY et, ut videtur, Them. 109, 9 || 27. ἐν  
οἷς δὲ...b, 5. ἔσται e duabus ed. contam., pr. b, 1. τὸ...5. ἔσται, post. a, 27. ἐν οἷς...  
b, 1. προσενοῶν, iudicat Torst., quod refellit Vahlen, Aristotel. Aufsätze I, p. 4 sqq.  
et Noetel, Zeitschr. f. Gym. 1864, p. 140 || 30. φιλίᾳ, οὕτω Vahlen, p. 6, φιλίᾳ. οὕτω  
Bek. Trend. Torst. || 31. συντίθεσθαι STVWY || post διάμετρος addunt ἢ τὸ σύμ-  
μετρον καὶ ἡ διάμετρος W Simpl. Torst., quod additamentum reicit Vahlen, p. 7 sq.,  
om. etiam vet. transl. || γινομένων VWX Bek. Trend., γενομένων etiam Them.  
Simpl. Torst. Vahlen Steinhart || 430 b, 1. πρὸς ἐν νοῶν LX, προσενοῶν etiam  
Simpl. et sine dubio Them. 109, 18 || καὶ συντιθείς unc. incl. Torst., leg. Simpl.  
Philop. Soph. et defendit Vahlen, p. 9 sqq. || 3. τὸ (καὶ τὸ solus T) μὴ λευκὸν  
συνέθηκεν omnes codd., τὸ μὴ λευκὸν unc. incl. Trend. in prima edit., cui assentitur  
Dittenberger, Gött. gel. Anz., p. 1615, in alt. ed. scriptis Belger de coniectura Roeperi,  
Philologus VII, p. 324: τὸ μὴ λευκὸν λευκὸν συν., quod iam Torst. coniecerat, <καὶ  
λευκόν> τὸ μὴ λευκόν, συνέθηκεν coni. Vahlen, p. 12, <καὶ> τὸ μὴ λευκόν <λευκόν>,  
συνέθηκεν Biehl, quod legisse videtur Philop. 548, 10 sq., “si album non albo aut si non  
album albo componit” vet. transl. || ἐνδέχεται...4. πάντα fort. post 5. ἔσται transponenda  
censet Maier I, p. 30, in adn. || 3. καὶ διαίρεσιν] καὶ κατὰ (vel κατὰ) διαίρεσιν coni.  
Chandler, p. 8 || 4. pro πάντα coni. ταῦτα vel τοιαῦτα Torst., leg. πάντα etiam  
Them., ἀμφω in interpr. Philop., πάντα defendit Vahlen, p. 14 sq. || γε εἰci vult Torst.,  
def. Vahlen, p. 17 || verba οὐ μόνον post ἀληθές transponi vult Torst., cui adversatur

remember because this is impassive, while the intellect which can be affected is perishable and without this does not think at all.

The process of thinking indivisible wholes belongs to a sphere **6** from which falsehood is excluded. But where both truth and falsehood are possible there is already some combining of notions into one. As, in the words of Empedocles, "where sprang into being the neckless heads of many creatures," then afterwards Love put them together, so these notions, first separate, are combined; as, for instance, the notions incommensurable and diagonal. And, if the thinking refers to the **2** past or to the future, the notion of time is included in the combination. Falsehood, in fact, never arises except when notions are combined. For, even if white be asserted to be not-white, not-white is brought into a combination. We may equally well call every statement a disjunction. But at any rate under truth and falsehood we include not only the assertion that Cleon is white, but also the assertion that he was or will be. And the unifying principle is in every case the mind.

Since, however, the term indivisible has two meanings, accord- **3** ing as a whole is not potentially divisible or is actually undivided, there is nothing to hinder us from thinking an indivisible whole, when we think of a length (that being actually undivided), or from thinking it in an indivisible time. For the time is a divisible or indivisible unit in the same way as the length thought of. We cannot therefore state what the mind thinks in each half of the time. For, if the whole be undivided, the half has only potential existence. But, if the mind thinks each half separately, it simultaneously divides the time also. And in that case it is as if the parts were separate lengths. If, however, the mind conceives the length as made up of the two halves, then the time may be regarded as made up of corresponding halves.

Again, that which is not quantitatively but specifically an **4**

Vahlen || 5. δὴ U X || 6. ἐκαστοῦ con. H. Jackson || 7. τὸ ἀδ.] τὸ διαίρετόν ἢ ἀδιαίρετον con. Torst., potest tale quid legisse Philop. 549, 18, τὴ ἀδιαίρετον con. H. Jackson || 8. ὅταν con. Torst., ὡς δὲ Steinhart || 8. ἀδ...ἐνεργεῖα in parenth. Torst. || post γὰρ addendum τὴ δύναμει ἔσται censet Essen III, p. 49 || 9. ὁμοίως...20. μήκει e duab. rec. contam. iudicat Torst., pr. 17. ἐνεστί...20. μήκει, post. 9. ὁμοίως...10. μήκει, quod negant Noetel et Dittenberger || 9. καὶ ἀδ.] καὶ οὐ διαίρετόν T, om. X et pr. W, καὶ ἀδιαίρετος etiam Them. Simpl. Philop. || 10. ἐνός L Torst., ἐνός, ἐνός T U W, tempus praesens etiam Them. Simpl. || 12. τῶν ἡμῶν ante νοῶν S U, om. T X || 14. τὸ δὲ μή...15. ψυχῆς post 20. καὶ μήκει transponenda censet Bywater, p. 58 || 14. κατὰ τὸ πρὸς T X || διαίρετόν pro ἀδιαίρετον con. Wallace, cui adversatur Susemihl, Oecon., p. 86.

δει νοεῖ ἐν ἀδιαιρέτῳ χρόνῳ καὶ ἀδιαιρέτῳ τῆς ψυχῆς· 15  
 κατὰ συμβεβηκὸς δέ, καὶ οὐχ ἥ ἐκεῖνα διαιρετά, ᾧ νοεῖ  
 καὶ ἐν ᾧ χρόνῳ, ἀλλ' ἥ ἀδιαίρετα· ἔνεστι γὰρ καὶ τούτοις  
 τι ἀδιαίρετον, ἀλλ' ἴσως οὐ χωριστόν, ὃ ποιεῖ ἓνα τὸν χρό-  
 νον καὶ τὸ μήκος. καὶ τοῦθ' ὁμοίως ἐν ᾧ παντὶ ἐστι τῷ συνεχεῖ  
 5 καὶ χρόνῳ καὶ μήκει. ἡ δὲ στιγμή καὶ πᾶσα διαίρεσις, καὶ 20  
 τὸ οὕτως ἀδιαίρετον, δηλοῦται ὥσπερ ἡ στέρησις. καὶ ὁμοιος  
 ὁ λόγος ἐπὶ τῶν ἄλλων, οἷον πῶς τὸ κακὸν γνωρίζει ἡ  
 6 τὸ μέλαν· τῷ ἐναντίῳ γὰρ πως γνωρίζει. δεῖ δὲ δυνάμει  
 εἶναι τὸ γνωρίζον καὶ ἐνεῖναι ἐν αὐτῷ. εἰ δέ τι μὴ ἐστὶν  
 ἐναντίον [τῶν αἰτίων], αὐτὸ ἐαυτὸ γινώσκει καὶ ἐνεργεῖα ἐστὶ 25  
 7 καὶ χωριστόν. ἔστι δ' ἡ μὲν φάσις τι κατὰ τινος, ὥσπερ ἡ  
 κατάφασις, καὶ ἀληθὴς ἡ ψευδὴς πᾶσα· ὁ δὲ νοῦς οὐ πᾶς,  
 ἀλλ' ὁ τοῦ τί ἐστὶ κατὰ τὸ τί ἦν εἶναι ἀληθὴς, καὶ οὐ τὶ  
 κατὰ τινος· ἀλλ' ὥσπερ τὸ ὁρᾶν τοῦ ἰδίου ἀληθές, εἰ δ' ἄν-  
 θρωπος τὸ λευκὸν ἢ μὴ, οὐκ ἀληθές ἀεί, οὕτως ἔχει ὅσα 30  
 ἄνευ ὕλης.

7 Τὸ δ' αὐτὸ ἐστὶν ἡ κατ' ἐνέργειαν ἐπιστήμη τῷ πράγ- 431a  
 ματι. ἡ δὲ κατὰ δυνάμιν χρόνῳ προτέρα ἐν τῷ ἐνί, ὅλως  
 δὲ οὐδὲ χρόνῳ· ἔστι γὰρ ἐξ ἐντελεχείᾳ ὄντος πάντα τὰ γι-  
 γνόμενα. φαίνεται δὲ τὸ μὲν αἰσθητὸν ἐκ δυνάμει ὄντος τοῦ  
 αἰσθητικοῦ ἐνεργεῖα ποιοῦν· οὐ γὰρ πάσχει οὐδ' ἀλλοιοῦται. 5

15. ψυχῆς νοήσει κατὰ συμβεβηκὸς sine interpunctione TV, νοήσει etiam legisse videtur Them. 110, 19, νοεῖ leg. Simpl. || 16. malletm hoc loco οὐχ ἡ [ἐκεῖνα] et 17. ἀλλ' ἡ <ἐκεῖνα> || virgulam post διαιετὰ Bek. Trend. Bywater, p. 58, post ἐκεῖνα Torst. Biehl Rodier || ἀδιαιρέτῳ τῆς ψυχῆς, κατὰ συμβεβηκὸς δὲ καὶ οὐχ ἡ ἐκεῖνα ἀδιαίρετα, ᾧ νοεῖ καὶ con. Christ || ᾧ] ᾧ τε con. Torst., τε om. Simpl., δ cum Vicomercato Bywater, p. 59 || ᾧ νοεῖ...17. χρόνῳ interpolata esse censet Wilson, Trans. of Ox. Phil. Soc. 1882/3, p. 10, cui adversatur Susemihl, B. J. XXXIV, 29 || 17. ἀλλ' ἡ ἀδ. unc. incl. Torst. Biehl, totam hanc enunciationem a Torst. sanata esse agnoscit etiam Hayduck, progr. Gryph. 1873, p. 5, contra Bywater haec verba, ut necessaria, retinere vult, p. 59, etiam Maier I, p. 32 in adn., leg. Simpl., sine uncis etiam Rodier, qui tamen ἄλλῃ pro ἀλλ' ἡ scripsit || 19. καὶ τὸ μήκος interpolata esse censet Wilson, l. l., probat Susemihl || καὶ τοῦθ'...20. μήκει post 10. μήκει transponenda esse censet Susemihl, B. J. XXXIV, 29 || 21. καὶ ὁμοιος...23. μέλαν delenda esse censet Hayduck, p. 6 || 24. γνωρίζειν V || ἐνεῖναι S U y Simpl. Philop. Bek. Trend. Brentano, p. 115, ἐν εἶναι L T V W X vet. transl. Biehl, καὶ μὴ ἐν εἶναι αὐτῶν con. Torst., ἐναντίον εἶναι ἐν αὐτῷ con. Bywater, p. 60 || ἐν ante αὐτῷ om. solus W Biehl, leg. etiam Simpl. || 25. αἰτίων] ἐναντίων S, αἰτίων etiam Them. Philop. Simpl. Brentano, p. 183 Bullinger, Arist. Nus-Lehre, p. 11, vel ἐναντίων vel ὄντων con. Torst., cui assentitur etiam Kampe, p. 275, adn. 1, ἀδιαιρέτων con. Essen, νοητῶν dubitanter con. Rodier II, 487, τῶν αἰτίων delenda esse censet Zeller, p. 578, cui assentiuntur Susemihl et Bywater, p. 60, unc. inclusi || ἐνεργεῖα fort. Them. 112, 3 Simpl. 258, 27. 31 || 26. τις L, unde τις φάσις κατὰ τινος con. Rodier II, 489, ἔστι δ' ἡ μὲν



indivisible whole the mind thinks in an indivisible unit of time and by an indivisible mental act. *Per accidens*, however, such specific unity is divisible, though not in the same way as they, the act of thought and the time required for the act, are divisible, but in the same way as they are whole and indivisible. For in these specific unities also there is present a something indivisible, though certainly not separately existent, the same as that which constitutes the unity of both the time and the length. And, as with time and length, so in like manner with whatever is continuous. But the point and every division and whatever is an undivided whole in the same sense as the point is clearly explained by the analogy of privation. And the same explanation holds in all other cases. How, for instance, is evil apprehended, or black? In some fashion by its contrary. But that which apprehends must potentially be, and must contain within itself, the contrary which it apprehends. If, however, there be something which has no contrary [*some one of the causes*], then it is itself the content of its own knowledge, is in actuality and is separately existent.

Now every proposition, like an affirmative proposition, predicating something of something, is true or false. But with thought this is not always so. When its object is the What in the sense of the quiddity and there is no predication, thought is in every case true. But, as the perception by sight of the proper object of sight is infallibly true, whereas in the question whether the white object is a man or not, perception by sight is not always true, so is it with immaterial objects.

Now actual knowledge is identical with the thing known. But potential knowledge is prior in time in the individual, and yet not universally prior even in time. For it is from something actually existent that all which comes into being is derived. And manifestly the sensible object simply brings the faculty of sense which was potential into active exercise: in this transition, in fact, the sense is not acted upon or qualitatively changed. Conse-

κατάφασις τι κατά τινος, ὥστερ καὶ ἡ ἀπόφασις coni. Torst., vulgatam tuentur etiam Simpl. Philop. 556, 8 || ὥστερ καὶ ἡ W Torst., καὶ non leg. Simpl. || ὥστερ ἡ κατάφασις, καὶ unc. incl. Essen || 27. ἡ καὶ L || 28. καὶ unc. incl. Essen || 29. ἀλλ' ὥστερ...30. ἀληθὲς δέ unc. incl. Essen III, p. 51 || 29. ὁρᾶν <ἐπὶ> coni. Beare, p. 90, adn. 2 || 30. post οὕτως in lemmate add. δὲ Simpl. cod. A || 431 a, 1. τὸ δ' αὐτὸ...7. τετελεσμένου alieno loco posita esse iudicat Torst., cui assentitur Zeller, p. 571, leg. veteres interpretes, nisi quod τὸ δ' αὐτὸ...3. γιγνόμενα praeterit Them., in quibus etiam Alex. ap. Philop. offendit || 1. τὸ αὐτὸ δ' T U V X y || 2. τινὰ τῶν βιβλίων ἔχουσιν ὅλως, τινὰ δὲ ἀπλῶς annotat Philop.

διὸ ἄλλο εἶδος τοῦτο κινήσεως· ἡ γὰρ κίνησις τοῦ ἀτελοῦς  
 ἐνέργεια ἦν, ἡ δ' ἀπλῶς ἐνέργεια ἑτέρα ἢ τοῦ τετελεσμένου.  
 2 τὸ μὲν οὖν αἰσθάνεσθαι ὁμοιον τῷ φάναι μόνον καὶ νοεῖν·  
 ὅταν δὲ ἡδὺ ἢ λυπηρόν, οἷον καταφᾶσα ἢ ἀποφᾶσα, διώ-  
 κει ἢ φεύγει· καὶ ἔστι τὸ ἡδεῖσθαι καὶ λυπεῖσθαι τὸ ἐνερ- 10  
 γεῖν τῇ αἰσθητικῇ μεσότητι πρὸς τὸ ἀγαθὸν ἢ κακόν, ἥ τοι-  
 αῦτα. καὶ ἡ φυγὴ δὲ καὶ ἡ ὄρεξις τοῦτο ἢ κατ' ἐνέργειαν,  
 καὶ οὐχ ἕτερον τὸ ὀρεκτικὸν καὶ φευκτικόν, οὐτ' ἀλλήλων οὔτε  
 3 τοῦ αἰσθητικοῦ· ἀλλὰ τὸ εἶναι ἄλλο. τῇ δὲ διανοητικῇ ψυχῇ  
 τὰ φαντάσματα οἷον αἰσθήματα ὑπάρχει. ὅταν δὲ ἀγαθὸν 15  
 ἢ κακὸν φήσῃ ἢ ἀποφήσῃ, φεύγει ἢ διώκει (διὸ οὐδέποτε  
 νοεῖ ἄνευ φαντάσματος ἢ ψυχῇ), ὥσπερ δὲ ὁ ἀῆρ τὴν κό-  
 ρην τοιανδὶ ἐποίησεν, αὕτη δ' ἕτερον, καὶ ἡ ἀκοὴ ὡσαύ-  
 τως, τὸ δὲ ἔσχατον ἔν, καὶ μία μεσότης, τὸ δ' εἶναι αὕτῃ  
 4 πλείω. τίνι δ' ἐπικρίνει τί διαφέρει γλυκὺ καὶ θερμόν, εἴ- 20  
 ρηται μὲν καὶ πρότερον, λεκτέον δὲ καὶ ᾧδε. ἔστι γὰρ ἔν  
 τι, οὕτω δὲ καὶ ὡς ὁρος. καὶ ταῦτα, ἔν τῷ ἀνάλογον ἢ  
 τῷ ἀριθμῷ ὄν, ἔχει πρὸς ἐκάτερον, ὡς ἐκεῖνα πρὸς ἀλλήλα·  
 τί γὰρ διαφέρει τὸ ἀπορεῖν πῶς τὰ μὴ ὁμογενῇ κρίνει ἢ

6. εἶδος om. SX, post τοῦτο TUVy Them. 28, 36, post κινήσεως W, vulgatam tuetur Simpl. || 7. ἦν om. LSUVX Them. 28, 37 et Simpl. || ἡ post ἑτέρα om. L, leg. Them. 29, 1 || post τετελεσμένου lacunam esse iudicat Susemihl, Burs. Jahresb. IX, 351 || 9. ὅταν] ὅτι coni. Essen III, p. 58 || 10. ἢ λυπ. TUVW Simpl. || 11. πρὸς τὸ ante τῇ transponendum putat Essen, l. 1. || ἡ τοιοῦτο L, om. X, ἡ τοιαῦτα etiam Philop., ἢ τὰ τοιαῦτα Simpl. || 12. δὴ S U W X, om. TV || ταυτὸν T, τὸ αὐτὸ LV Rodier, ταυτὸ scripsit Biehl, τοῦτο reliqui et Bek. Trend. Torst., qui conicit τὸ αὐτὸ τοῦτο, veteres interp. quomodo legerint, incertum est || ἡ om. V, aut delendum aut ἡ scribendum censet Trend., unc. incl. Rodier || 13. καὶ τὸ φ. L et interpret. Them. Simpl. || 14. τῇ δὲ διαν....17. ἡ ψυχῇ in parenth. ponenda et fort. ante 431 b, 2. τὰ μὲν οὖν εἶδη transponenda censet Cornford || 15. αἰσθήματα] αἰσθητὰ coni. Schell, Einh. d. Seelenleb. p. 19 || 15. ὅταν...16. διώκει post 17. ψυχῇ ponenda esse iudicat Susemihl || 16. φήσῃ ἢ ἀποφήσῃ solus L, uncis incl. Torst., καταφήσῃ ἢ ἀποφήσῃ γ, φησὶν ἢ ἀπόφῃσι TX, κατάφῃσιν ἢ ἀπόφῃσι U, ἐστὶ κατάφῃσιν ἢ ἀπόφῃσιν V, ἐστὶ καταφήσειν ἢ ἀποφήσειν corr. S, κατάφῃσις ἢ ἀπόφῃσις W, Philop. 559, 31 interpretatur τὰ ὑποκείμενα οἰοῦναι καταφάσεις εἰσι καὶ ἀποφάσεις || καὶ φεύγει STUVWX, ἢ φεύγει γ || 16. διδ...17. ψυχῇ secludenda esse coni. Torst., in parenth. posui || 17. totum hunc locum ab ὥσπερ...18. 1. λευκόν a re proposita alienum esse iudicat Torst., non interpretatur Them., recte explicat Neuhaeuser, p. 51 sqq. || post ἡ ψυχῇ virgulam Bek. Trend., punctum Torst. Biehl Rodier || δὲ] γὰρ coni. Essen || 18. αὕτῃ UVW y Bek. Trend., αὕτη etiam Simpl. Soph. Torst. || δ' unc. incl. Essen || 19. post ὡσαύτως colon Bek. Trend. Rodier || αὕτῃ om. S U V X || 20. post πλείω signum enunciati non absoluti cum Torst. posuit Biehl, adversatur Rodier II, 499, etiam Simpl. et Philop. hoc loco desiderant apodosin, putant autem eam ex praecedentibus supplendam esse; verba 17. ὥσπερ...20. πλείω post 21. et 22. ἔν τι transponenda et apodosin sic conformandam esse: οὕτω δὲ καὶ ταῦτα (omissis verbis καὶ ὡς ὁρος)

quently this must be a different species of motion. For motion is, as we saw, an activity of that which is imperfect; but activity in the absolute sense, that is, activity of that which has reached perfection, is quite distinct.

Sensation, then, is analogous to simple assertion or simple apprehension by thought and, when the sensible thing is pleasant or painful, the pursuit or avoidance of it by the soul is a sort of affirmation or negation. In fact, to feel pleasure or pain is precisely to function with the sensitive mean, acting upon good or evil as such. It is in this that actual avoidance and actual appetition consist: nor is the appetitive faculty distinct from the faculty of avoidance, nor either from the sensitive faculty; though logically they are different. But to the thinking soul images serve as present sensations: and when it affirms or denies good or evil, it avoids or pursues (this is why the soul never thinks without an image). To give an illustration: the air impresses a certain quality on the pupil of the eye, and this in turn upon something else, and so also with the organ of hearing, while the last thing to be impressed is one and is a single mean, though with a plurality of distinct aspects.

What that is by which the soul judges that sweet is different from warm has been explained above, but must be restated here.

It is a unity, but one in the same sense as a boundary point, and its object, the unity by analogy of these two sensibles or their numerical unity, is related to each of the two in turn as they, taken separately, are to each other. For what difference does it make whether we ask how we judge the sensibles that do not fall under the same genus, or the contraries which do,

censet Freudenthal, Rhein. Mus. 1869, p. 398, cui assentitur Susemihl, Burs. Jahresb. XVII, p. 264 et Phil. Wochenschr. 1882, p. 1283 || 21. ὥδε] νῦν T Wy et in interpret. Simpl. Philop. || ἐστι γὰρ...23. ἀλλήλα ante 20. τίνι transponenda censet Essen II, p. 88 || 22. καὶ ὡς] καὶ ὁ X y, ἡ στιγμὴ καὶ ὁ T, om. cum ipso ὅρος L V, in interpret. ὥσπερ καὶ ὁ ὅρος Simpl., ὥσπερ ὅρος Philop., qui ἡ στιγμὴ non legerunt; οὕτω δὲ καὶ ἡ στιγμὴ καὶ ὅλος ὁ ὅρος de coniectura scripsit Torst. || post ταῦτα virgulam posuit Rodier || ἐν L S V X Trend., ἐν etiam Simpl. Philop. Soph. in marg. Bek. Torst. || 22. et 23. ἡ τῷ] ἡ τῷ L y, ἡ U V W X Simpl., om. S, καὶ τῷ T Philop. Bek. Trend. Torst. Biehl Rodier || 23. ὅν] ὅν omnes libri scripti et ante Biehlium impressi, ὅν restituerunt Freudenthal, l. l. et Neuhaeuser, confirmant Simpl. et vet. transl., quae vertit ens || καὶ ταῦτα ἐν τῷ ἀνάλογον. καὶ τὸ ἀριθμῷ ἐν ἔχει πρὸς ἑκάτερον ὡς in scholis coni. H. Jackson || ἑκάτερα Simpl., post ἐκάτ. excidisse ἐναντίον coni. Torst., cui assentitur Freudenthal || ὡς...ἀλλήλα unc. incl. Torst., legit etiam Simpl. et fort. Philop., defendit Neuhaeuser, p. 57 || ὡς] ᾗ Simpl. || 24. μὴ om. T V W y Simpl. Bek. Trend., leg. etiam Philop. Soph. vet. transl.

τὰ ἐναντία, οἷον λευκὸν καὶ μέλαν; ἔστω δὴ ὡς τὸ Α τὸ 25  
 λευκὸν πρὸς τὸ Β τὸ μέλαν, τὸ Γ πρὸς τὸ Δ [ὡς ἐκεῖνα  
 πρὸς ἄλληλα]. ὥστε καὶ ἐναλλάξ. εἰ δὴ τὰ ΓΔ ἐνὶ εἴῃ  
 ὑπάρχοντα, οὕτως ἔξει ὥσπερ καὶ τὰ ΑΒ, τὸ αὐτὸ μὲν  
 καὶ ἐν, τὸ δ' εἶναι οὐ τὸ αὐτό, ἀκκέينو ὁμοίως. ὁ δ' αὐτὸς  
 λόγος καὶ εἰ τὸ μὲν Α τὸ γλυκὺ εἴῃ, τὸ δὲ Β τὸ λευκόν. 431b

5 τὰ μὲν οὖν εἶδη τὸ νοητικὸν ἐν τοῖς φαντάσμασι νοεῖ,  
 καὶ ὡς ἐν ἐκείνοις ὥρισταὶ αὐτῷ τὸ διωκτὸν καὶ φευκτόν,  
 καὶ ἐκτὸς τῆς αἰσθήσεως, ὅταν ἐπὶ τῶν φαντασμάτων ἦ,  
 κινεῖται· οἷον αἰσθανόμενος τὸν φρυκτὸν ὅτι πῦρ, [τῇ κοινῇ] 5  
 6 γνωρίζει, ὁρῶν κινούμενον, ὅτι πολέμιος. ὅτε δὲ τοῖς ἐν τῇ  
 ψυχῇ φαντάσμασιν ἢ νοήμασιν ὥσπερ ὁρῶν λογίζεται καὶ  
 βουλευέται τὰ μέλλοντα πρὸς τὰ παρόντα· καὶ ὅταν εἴπῃ  
 ὡς ἐκεῖ τὸ ἡδὺ ἢ λυπηρόν, ἐνταῦθα φεύγει ἢ διώκει,  
 καὶ ὅλως ἐν πράξει. καὶ τὸ ἄνευ δὲ πράξεως, τὸ ἀληθὲς 10  
 καὶ τὸ ψεῦδος, ἐν τῷ αὐτῷ γένει ἐστὶ τῷ ἀγαθῷ καὶ κακῷ·  
 7 ἀλλὰ τῷ γε ἀπλῶς διαφέρει καὶ τινί. τὰ δὲ ἐν ἀφαι-  
 ρέσει λεγόμενα νοεῖ ὥσπερ ἂν εἰ τὸ σιμόν, ἦ μὲν σιμόν,  
 οὐ κεχωρισμένως, ἦ δὲ κοῖλον, εἴ τις ἐνόει ἐνεργεία, ἄνευ  
 τῆς σαρκὸς ἂν ἐνόει ἐν ἦ τὸ κοῖλον· οὕτω τὰ μαθηματικά 15  
 8 οὐ κεχωρισμένα ὡς κεχωρισμένα νοεῖ, ὅταν νοῇ ἐκεῖνα. ὅλως  
 δὲ ὁ νοὺς ἐστὶν ὁ κατ' ἐνέργειαν τὰ πράγματα [νοῶν]. ἄρα  
 δ' ἐνδέχεται τῶν κεχωρισμένων τι νοεῖν ὄντα αὐτὸν μὴ κε-  
 χωρισμένον μεγέθους, ἢ οὐ, σκεπτέον ὕστερον.

25. τὰ ἐναντία S W X y Bek. Trend., τὰ ἐναντία etiam Soph. Torst. || 26. ὡς...27. ἄλληλα interpolata esse iudicant Christ, Stud. in Ar. libb. met. coll. (in thes.) Freudenthal et Baeumker, p. 74, unc. incl. Biehl Rodier, leg. Philop. 561, 10 || 27. ἐν ΤΥ || 28. καὶ τὰ] καὶ τὸ S T V, κἀν εἰ τὰ con. Torst. || 29. pro ἀκκέينو, quod etiam leg. Philop., con. ἀκκέινα Jul. Pacius Torst. Brentano || 431 b, 1. καὶ] κἀν S U V X Simpl. || μὲν τὸ S U V W X || 3. ὥριστο U X et corr. S, etiam Simpl. || 4. αἰσθ. ὅν ὅταν S T U V X, αἰσθ. ὡν ὅταν W y || 5. φευκτὸν T U V W X, φρυκτὸν etiam Simpl. Philop., de Them. codd. v. Hayduki ap. crit. ad 114, 1 || ὅτι πῦρ unc. incl. Torst., leg. Philop. Simpl. || τῇ κινήσει Basil. in marg., scripsit Torst., τῇ κοινῇ reliqui, etiam Simpl. Philop., delendum censet Bywater, p. 61, cui assentitur Susemihl, cf. Praechter, Berl. Phil. Woch., p. 196 sqq., unc. inclusi || 9. post ἐνταῦθα excidisse τὸ ἀγαθὸν ἢ κακὸν con. Torst. || 10. ὅλως] οὕτως con. Trend. || καὶ ante τὸ ἀληθὲς leg. Simpl. in lemmate || 11. τὸ om. L et fort. Philop. in interpr. 562, 10 || καὶ τῷ κακῷ L U X, ἢ τῷ W, τῷ om. etiam Simpl. || 12. γε om. S W y || 12. τὰ δὲ...19. ὕστερον a re proposita aliena et 12. τὰ δὲ...16. ἐκεῖνα corrupta esse iudicat Torst., locum ita restituit Bywater, p. 62: τὰ δ' ἐν ἀφαιρέσει λεγόμενα νοεῖ, ὥσπερ ἂν, εἰ <τις> τὸ σιμόν ἢ μὲν σιμόν οὐ [κεχωρισμένως], ἢ δὲ κοῖλον [εἴ τις] ἐνόει, ἐνεργεία <νοῶν> ἄνευ τῆς σαρκὸς ἂν ἐνόει ἐν ἦ τὸ κοῖλον, οὕτω τὰ μαθηματικά κτέ. || 12. ἐν om. S T U X Them., leg. Simpl. Philop. || 13. ἂν om. S V X, leg. etiam Philop. || 14. ἦ δὲ κοῖλον] εἰ δὲ καμπύλον X, καμπύλον in interpret. etiam Simpl. Philop., κοῖλον Them. || εἰ

like white and black? Suppose, then, that as *A*, the white, is to *B*, the black, so *C* is to *D* [*that is, as those sensibles are to one another*]. It follows, *convertendo*, that *A* is to *C* as *B* to *D*. If, then, *C* and *D* are attributes of a single subject, the relation between them, like that between *A* and *B*, will be that they are one and the same, though the aspects they present are distinct: and so, too, of their single subject. The same would hold, supposing *A* were the sweet and *B* the white.

Thus it is the forms which the faculty of thought thinks in 5  
 Images mental images. And, as in the region of sense the objects  
 move to of pursuit and avoidance have been defined for it, so also  
 action. outside sensation, when engaged with images, it is moved  
 to action: as, for instance, you perceive a beacon and say "That is  
 fire"; and then [*by the central sense*], seeing it in motion, you  
 recognise that it signals the approach of an enemy. But at other 6  
 times under the influence of the images or thoughts in the soul  
 you calculate as though you had the objects before your eyes and  
 deliberate about the future in the light of the present. And when  
 you pronounce, just as there in sensation you affirm the pleasant or  
 the painful, here in thought you pursue or avoid: and so in action  
 generally. And, further, what is unrelated to action, as truth and  
 falsehood, is in the same class with the good and the evil. Yet in  
 this, at any rate, they differ, that the former are absolute, the latter  
 relative to some one concerned.

But the abstractions of mathematics, as they are called, the 7  
 Mathem- mind thinks as it might conceive the snub-nosed;  
 matical quā snub-nosed, it would not be conceived apart from  
 objects, flesh, whereas quā hollow, if anyone ever had actually so  
 how conceived. conceived it, he would have conceived it without the flesh  
 in which the hollowness resides. So, too, when we think of mathe-  
 matical objects, we conceive them, though not in fact separate  
 from matter, as though they were separate. And, speaking 8  
 generally, mind in active operation is its objects [*when it thinks*  
*them*]. The question, whether it is possible for the mind to think  
 anything which is unextended without being itself unextended,  
 must for the present be postponed.

τις ἐλ τι Ly Simpl., om. X, ἐλερ coni. Trend. || ἐννοεῖ S, ἐννοεῖ V || ὥσπερ ἀνευ coni.  
 Torst., quod refellit Vahlen, Oest. Gymn. Ztschr. 1867, p. 722 || 15. ἀν secludendum esse  
 coni. Susemihl, Oecon., p. 86 || ἐν ᾗ om. S U V, leg. Simpl. || 16. ὥς κεχ. ] ὥσει κεχ. T,  
 τῇ ὑποστάσει L, τῇ ὑποστάσει ὥς κεχ. W, alteram quoque lectionem ferri: οὐ κεχωρισμένως  
 ὥς κεχωρισμένως commemorat Simpl., ὥς κεχωρισμένα etiam Philop. Simpl. et, ut videtur,  
 Them. 114, 22 || νοῦ <ᾗ> ἐκεῖνα legendum proponit Bon., cf. Oest. Gymn. Ztschr.  
 1867, p. 722 || 17. νοῦν om. L U pr. E et Torst., uncis incl. Bon., Ind. Ar. 491 a, 61  
 Susemihl, B. J. XLII, 240 Busse, Hermes XXVIII, 271, legit Simpl. et vet. transl.,  
 non leg. 566, 22—24 neque ad 402 b, 7 (37, 26 sq.) Philop. || 18. αὐτὸν ὄντα S V W X y.

8 Νῦν δὲ περὶ ψυχῆς τὰ λεχθέντα συγκεφαλαιώσαν- 20  
 τες, εἰπώμεν πάλιν ὅτι ἡ ψυχὴ τὰ ὄντα πῶς ἐστίν· πάντα  
 γὰρ ἡ αἰσθητὰ τὰ ὄντα ἡ νοητά, ἐστὶ δ' ἡ ἐπιστήμη μὲν  
 τὰ ἐπιστητά πως, ἡ δ' αἰσθησις τὰ αἰσθητά· πῶς δὲ τοῦτο,  
 2 δεῖ ζητεῖν. τέμνεται οὖν ἡ ἐπιστήμη καὶ ἡ αἰσθησις εἰς τὰ  
 πράγματα, ἡ μὲν δυνάμει εἰς τὰ δυνάμει, ἡ δ' ἐντελε- 25  
 χείᾳ εἰς τὰ ἐντελεχεῖα. τῆς δὲ ψυχῆς τὸ αἰσθητικὸν καὶ  
 τὸ ἐπιστημονικὸν δυνάμει ταῦτά ἐστι, τὸ μὲν ἐπιστητὸν τὸ  
 δὲ αἰσθητὸν. ἀνάγκη δ' ἡ αὐτὰ ἡ τὰ εἶδη εἶναι. αὐτὰ  
 μὲν δὴ οὐ· οὐ γὰρ ὁ λίθος ἐν τῇ ψυχῇ, ἀλλὰ τὸ εἶ-  
 3 δος· ὥστε ἡ ψυχὴ ὥσπερ ἡ χεὶρ ἐστίν· καὶ γὰρ ἡ χεὶρ 432a  
 ὄργανόν ἐστιν ὀργάνων, καὶ ὁ νοῦς εἶδος εἰδῶν καὶ ἡ αἰ-  
 σθησις εἶδος αἰσθητῶν. ἐπεὶ δὲ οὐδὲ πρᾶγμα οὐθέν ἐστι  
 παρὰ τὰ μεγέθη, ὡς δοκεῖ, τὰ αἰσθητὰ κεχωρισμένον, ἐν  
 τοῖς εἶδεσι τοῖς αἰσθητοῖς τὰ νοητά ἐστὶ, τά τε ἐν ἀφαι- 5  
 ρέσει λεγόμενα, καὶ ὅσα τῶν αἰσθητῶν ἕξεις καὶ πάθη.  
 καὶ διὰ τοῦτο οὔτε μὴ αἰσθανόμενος μὴθὲν οὐθέν ἂν μάθοι  
 οὐδὲ ξυνίει· ὅταν τε θεωρῇ, ἀνάγκη ἅμα φαντάσματι  
 θεωρεῖν· τὰ γὰρ φαντάσματα ὥσπερ αἰσθήματά ἐστι,  
 πλὴν ἄνευ ὕλης. ἐστὶ δ' ἡ φαντασία ἕτερον φάσεως καὶ 10  
 ἀποφάσεως· συμπλοκὴ γὰρ νοημάτων ἐστὶ τὸ ἀληθὲς ἡ  
 ψεῦδος. τὰ δὲ πρῶτα νοήματα τίνι διοίσει τοῦ μὴ φαν-  
 τάσματα εἶναι; ἡ οὐδὲ τᾶλλα φαντάσματα, ἀλλ' οὐκ ἄνευ  
 φαντασμάτων.

21. et 22. ex solo E ἐστίν· πάντα γὰρ ἡ scripsit Biehl, leg. etiam Soph. 138, 33 (ἡ in uno Soph. cod. A), ἐστὶ (τὰ X) πάντα. ἡ γὰρ (om. γὰρ L) αἰσθ. reliqui codd., etiam Them. Philop. 567, 17 vet. transl. Bek. Trend. Torst. Rodier, qui tamen pro puncto post πάντα colon posuit, ἐστὶ πάντα. πάντα γὰρ ἡ coni. Torst. || 22. δ'] δὴ E L, δὲ ἡ Them. Soph. || 24. <τρόπον τινὰ τῷ ἀνάγκασθαι> εἰς coni., vel potius interpr., Essen, Beitr. z. Lüs. d. ar. Frage, p. 34, εἰς om. L Soph., insert. E<sub>2</sub> (Stapf.), ὡς coni. Susemihl, B. J. IX, 352, qui etiam ὡς pro 25. et 26. εἰς scribi vult, B. J. XXXIV, 30; cf. tamen Susem. ibid. XLII, 238, LXVII, 104, ὥσπερ καὶ τὰ πράγ. coni. Torst. || 25. ἡ prius rc. E in ras. || δυνάμει et 26. ἐντελεχείαι L et pr. E Torst. Biehl, τὰς δυνάμει et τὰς ἐνεργείαι Soph., τὰ δυνάμει et τὰ ἐντελεχεῖαι reliqui codd. omnes (praeterquam quod etiam SX τὰς ἐντελεχείαι praebent), etiam Them. Simpl. Philop., qui τὰ ἐνεργείαι interpretantur, et vet. transl. Bullinger, Metakr. Gänge, p. 6, Nus-Lehre, p. 17 Susemihl, B. J. XXXIV, 30 Marchl, p. 18, εἰς δυνάμει et εἰς ἐντελεχείαι scribarum errore ex εἰς δυνάμει et εἰς ἐντελεχεῖαι (sc. πράγματα) orta esse suspicatur Christ || 27. τὸ om. E L S U V X, leg. Soph. || ταῦτόν E L Bek., ταῦτά corr. E<sub>2</sub> (Bhl.), scripsit Biehl in ed. alt., ταῦτα corr. E<sub>2</sub> (Rr.), ταῦτα etiam Soph. et vet. transl. || ἐπιστητὸν] ἐπιστημονικόν S U V et 28. αἰσθητικόν S, unde ταῦτά ἐστὶ, τὸ μὲν ἐπιστημονικὸν τὸ ἐπιστητὸν, τὸ δὲ αἰσθητικὸν τὸ αἰσθητὸν scripsit Torst., τὸ μὲν <τὸ> ἐπιστητὸν τὸ δὲ <τὸ> αἰσθητὸν coni. Hayduck, ἐπιστητῆς et

And now let us sum up what has been said concerning the soul **8**

Summary  
of results.

by repeating that in a manner the soul is all existent things. For they are all either objects of sensation or objects of thought; and knowledge and sensation are in a manner identical with their respective objects. How this is so requires to be explained. Knowledge and sensation, then, are subdivided to **2** correspond to the things. Potential knowledge and sensation answer to things which are potential, actual knowledge and sensation to things which are actual, while the sensitive and the cognitive faculties in the soul are potentially these objects; I mean, object of sensation and object of cognition respectively. It follows that the faculties must be identical, if not with the things themselves, then with their forms. The things themselves they are not, for it is not the stone which is in the soul, but the form of the stone. So that there is an analogy between the soul and the hand; for, as the hand is the instrument of instruments, so the intellect is the form

Nihil est in  
intellectu  
quod non  
prius in  
sensu.

of forms and sensation the form of sensibles. But, since, **3** apart from sensible magnitudes there is nothing, as it would seem, independently existent, it is in the sensible forms that the intelligible forms exist, both the abstractions of mathematics, as they are called, and all the qualities and attributes of sensible things. And for this reason, as without sensation a man would not learn or understand anything, so at the very time when he is actually thinking he must have an image before him. For mental images are like present sensations, except that they are immaterial. Imagination, however, is distinct from affirmation and negation, for it needs a combination of notions to constitute truth or falsehood. But, it may be asked, how will the simplest notions differ in character from mental images? I reply that neither these nor the rest of our notions are images, but that they cannot dispense with images.

αἰσθητῶ Chandler, τὸ μὲν τὸ ἐπιστητῶν τὸ δὲ τὸ αἰσθητῶν εἶδος Essen, p. 72, vulgatum tuetur etiam vet. transl. || 29. γὰρ ante δὴ STUX Soph. Bek. Trend. Torst., om. etiam Philop. et vet. transl. || ὁ om. EL Them. Philop., leg. Soph. || 432 a, 2. νοῦς ἐστὶν SVγ, νοῦς δὲ TW || εἶδος om. E, ἐστὶν εἶδος marg. E || 5. ἐν om. ELSUV Them. Philop., leg. Simpl. || 7. αἰσθανόμενον L et E (Trend.) || 8. ξυνίη LSXγ Philop., ξυνίη reliqui codd. Trend., ξυνέη Bek. Torst. || δὲ TUV || φαντάσματα SVWX, φαντάσματι E, ι in rasura, etiam Them. Philop., scripsit Biehl, reliqui ante Biehlium omnes φάντασμα τι, etiam Simpl. vet. transl. Bek. Trend. Torst. || 9. αἰσθητά] αἰσθητά coni. Kampe, p. 101 || 10. et 11. καὶ ἀποφάσεως om. SUV, leg. etiam Soph. || 11. ἐστὶ νοημάτων SUV || 12. τίνι EL, reliqui τί, etiam Them. Philop. 569, 21 et ad 403 a, 8 (45, 22) || φάντασμα E, φαντάσματα etiam Them. Philop. || 13. τὰλλα] ταῦτα Them. 116, 18 (sed τὰλλα ex Arist. scripsit Hayduck) Ald. Torst. Freudenthal, p. 13, τὰλλα vel τὰ ἄλλα etiam Simpl. et Philop. 569, 28 et ad 403 a, 8 (45, 23).

9 Ἐπεὶ δὲ ἡ ψυχὴ κατὰ δύο ᾧρισται δυνάμεις ἡ τῶν 15  
ζώων, τῷ τε κριτικῷ, ὃ διανοίας ἔργον ἐστὶ καὶ αἰσθήσεως,  
καὶ ἔτι τῷ κινεῖν τὴν κατὰ τόπον κίνησιν, περὶ μὲν αἰσθή-  
σεως καὶ νοῦ διωρίσθω τοσαῦτα, περὶ δὲ τοῦ κινουίντος,  
τί ποτέ ἐστι τῆς ψυχῆς, σκεπτέον, πότερον ἔν τι μόριον  
αὐτῆς χωριστὸν ὃν ἡ μεγέθει ἡ λόγῳ, ἡ πᾶσα ἡ ψυχὴ, 20  
καὶ εἰ μόριόν τι, πότερον ἰδίον τι παρὰ τὰ εἰωθότα λέγε-  
2 σθαι καὶ τὰ εἰρημένα, ἡ τούτων ἔν τι. ἔχει δὲ ἀπορίαν  
εὐθύς πῶς τε δεῖ μόρια λέγειν τῆς ψυχῆς καὶ πόσα.  
τρόπον γάρ τινα ἀπειρα φαίνεται, καὶ οὐ μόνον ἃ τινες  
λέγουσι διορίζοντες, λογιστικὸν καὶ θυμικὸν καὶ ἐπιθυμητι- 25  
κόν, οἱ δὲ τὸ λόγον ἔχον καὶ τὸ ἄλογον· κατὰ γὰρ τὰς  
διαφορὰς δι' ἃς ταῦτα χωρίζουσι, καὶ ἄλλα φανεῖται  
μόρια μείζω διάστασιν ἔχοντα τούτων, περὶ ὧν καὶ νῦν εἴ-  
ρηται, τό τε θρεπτικόν, ὃ καὶ τοῖς φυτοῖς ὑπάρχει καὶ  
πᾶσι τοῖς ζώοις, καὶ τὸ αἰσθητικόν, ὃ οὔτε ὡς ἄλογον οὔτε 30  
3 ὡς λόγον ἔχον θείη ἂν τις ῥαδίως. ἔτι δὲ τὸ φανταστικόν,  
ὃ τῷ μὲν εἶναι πάντων ἕτερον, τίνι δὲ τούτων ταῦτον ἡ ἔτε- 432b  
ρον, ἔχει πολλὴν ἀπορίαν, εἴ τις θήσῃ κεχωρισμένα μό-  
ρια τῆς ψυχῆς. πρὸς δὲ τούτοις τὸ ὀρεκτικόν, ὃ καὶ λόγῳ  
καὶ δυνάμει ἕτερον ἂν δόξειεν εἶναι πάντων. καὶ ἄποπον δὴ  
τὸ τοῦτο διασπᾶν· ἔν τε τῷ λογιστικῷ γὰρ ἡ βούλησις γίνεται, 5  
καὶ ἔν τῷ ἀλόγῳ ἡ ἐπιθυμία καὶ ὁ θυμός· εἰ δὲ τρία ἡ  
4 ψυχὴ, ἔν ἐκάστῳ ἔσται ὀρεξεις. καὶ δὴ καὶ περὶ οὗ νῦν ὁ  
λόγος ἐνέστηκε, τί τὸ κινεῖν κατὰ τόπον τὸ ζῶόν ἐστιν; τὴν  
μὲν γὰρ κατ' αὐξήσιν καὶ φθίσιν κίνησιν, ἅπασιν ὑπάρχου-  
σαν, τὸ πᾶσιν ὑπάρχον δόξειεν ἂν κινεῖν τὸ γεννητικὸν καὶ 10  
θρεπτικόν· περὶ δὲ ἀναπνοῆς καὶ ἐκπνοῆς καὶ ὕπνου καὶ  
ἐγρηγόρσεως ὕστερον ἐπισκεπτέον· ἔχει γὰρ καὶ ταῦτα πολ-  
5 λὴν ἀπορίαν. ἀλλὰ περὶ τῆς κατὰ τόπον κινήσεως, τί τὸ

15. ἡ ante τῶν om. L et pr. E (Bus.) Soph. || 20. ἡ post ὃν om. S U W Soph., leg. Simpl. || 23. τε] ποτε W, om. L, τε leg. Soph. || δεῖ] δὴ E (Trend.), δεῖ corr. E || λέγειν ψυχῆς X, ψυχῆς λέγειν S T U V W y Soph. || 27. ταύτας E L, ταῦτα etiam Soph. || φαίνεται T U W X y, φαίνονται L S V, φανεῖται etiam Soph. || 29. τε om. S T U V W X, δὲ y, τε etiam Soph. || δ om. S U V, leg. Them. || 30. δ om. U V || 432 b, 1. δ om. E Them. 117, 15 Philop. 574, 22 in lemmate, leg. etiam Soph. || τὸ E L, τῷ leg. Them. Soph. || τινι Bek., τίνι etiam Philop. Soph. || 4. πάντων om. W y, leg. etiam Them. Soph. || καὶ ante ἀποπον om. T U V W y || δὴ τὸ τοῦτο] δὲ τοῦτο T V y, δὲ τὸ τοῦτο W, δὴ τὸ τοῦτο E Soph., artic. τὸ etiam Them. Simpl., reliqui ante Torst. omnes δὴ τοῦτο, etiam Bek. Trend., δὴ τὸ, uncis includens τοῦτο, Torst. || 9. ἀξην E



The soul in animals has been defined in virtue of two faculties, **9**  
 not only by its capacity to judge, which is the function  
 of thought and perception, but also by the local move-  
 ment which it imparts to the animal. Assuming the nature  
 of sensation and intellect to have been so far determined, we  
 have now to consider what it is in the soul which initiates  
 motion: whether it is some one part of the soul, which is either  
 locally separable or logically distinct, or whether it is the whole  
 soul: and again, if a separate part, whether it is a special part  
 distinct from those usually recognised and from those enumerated  
 above, or whether it coincides with some one of these. A question **2**  
 at once arises in what sense it is proper to speak of parts  
 of the soul and how many there are. For in one sense  
 there appear to be an infinite number of parts and not  
 merely those which some distinguish, the reasoning, passionate and  
 concupiscent parts, for which others substitute the rational and the  
 irrational. For, if we examine the differences on which they base  
 their divisions, we shall find that there are other parts separated  
 by a greater distance than these; namely, the parts which we  
 have just discussed, the nutritive, which belongs to plants as  
 well as to all animals, and the sensitive, which cannot easily be  
 classed either as rational or irrational. Imagination, again, is **3**  
 logically distinct from them all, while it is very difficult to say  
 with which of the parts it is in fact identical or not identical, if we  
 are to assume separate parts in the soul. Then besides these there  
 is appetency, which would seem to be distinct both in concept and  
 in capacity from all the foregoing. And surely it is absurd to split  
 this up. For wish in the rational part corresponds to concupiscence  
 and passion in the irrational. And, if we make a triple division of  
 soul, there will be appetency in all three parts.

To come now to the question at present before us, what is it **4**  
 that imparts to the animal local movement? For as for the  
 motion of growth and decay, which is found in all animals, it  
 would seem that this must be originated by that part of soul  
 which is found in all of them, the generative and nutritive  
 part. Inspiration and expiration of breath, sleep and waking,  
 subjects full of difficulty, call for subsequent enquiry. But to **5**  
 return to locomotion, we must enquire what it is that imparts

(Trend.), αὔξησιν etiam in interpret. Them. Philop. Soph. || ἅπασιν ὑπάρχουσιν E et  
 Soph., ἡ πᾶσιν ὑπάρχουσα W, at πᾶσιν ὑπάρχουσι reliqui codd. || 10. καὶ θρεπτικὸν om.  
 E L, leg. etiam Them. Soph., καὶ τὸ θρ. S || 11. καὶ ante ἔπνον om. E || 13. τί om. E,  
 leg. etiam Them. Soph.

κινῶν τὸ ζῶον τὴν πορευτικὴν κίνησιν, σκεπτέον. ὅτι μὲν οὖν οὐχ ἡ θρεπτικὴ δύναμις, διήλον· αἰετὶ γὰρ ἕνεκά του ἡ κίνησις 15 αὕτη, καὶ ἡ μετὰ φαντασίας ἡ ὀρέξεώς ἐστιν· οὐθεν γὰρ μὴ ὀρεγόμενον ἡ φεύγον κινεῖται ἀλλ' ἡ βία. ἔτι καὶ τὰ φυτὰ κινήτικα ἦν, καὶ εἶχεν τι μόριον ὀργανικὸν πρὸς τὴν 6 κίνησιν ταύτην. ὁμοίως δὲ οὐδὲ τὸ αἰσθητικόν· πολλὰ γὰρ ἐστὶ τῶν ζῴων ἃ αἰσθησιν μὲν ἔχει, μόνιμα δ' ἐστὶ καὶ ἀκί- 20 νητα διὰ τέλους. εἰ οὖν ἡ φύσις μήτε ποιεῖ μάτην μηθέν μήτε ἀπολείπει τι τῶν ἀναγκαίων, πλὴν ἐν τοῖς πηρώμασι καὶ ἐν τοῖς ἀτελέσιν· τὰ δὲ τοιαῦτα τῶν ζῴων τέλεια καὶ οὐ πηρώματά ἐστιν· σημείον δ' ὅτι ἔστι γεννητικὰ καὶ ἀκμὴν ἔχει καὶ φθίσιν· ὥστ' εἶχεν ἂν καὶ τὰ ὀργανικὰ μέρη τῆς 25 7 πορείας. ἀλλὰ μὴν οὐδὲ τὸ λογιστικὸν καὶ ὁ καλούμενος νοῦς ἐστὶν ὁ κινῶν· ὁ μὲν γὰρ θεωρητικὸς οὐθεν νοεῖ πρακτόν, οὐδὲ λέγει περὶ φευκτοῦ καὶ διωκτοῦ οὐθέν, αἰετὶ δὲ ἡ κίνησις ἡ φεύγον- 8 τος ἡ διώκοντος τί ἐστιν. ἀλλ' οὐδ' ὅταν θεωρῇ τι τοιοῦτον, ἡδὴ κελεύει διώκειν ἡ φεύγειν, οἷον πολλάκις διανοεῖται 30 φοβερὸν τι ἢ ἡδύ, οὐ κελεύει δὲ φοβεῖσθαι, ἢ δὲ καρδία 8 κινεῖται, ἂν δ' ἡδύ, ἕτερόν τι μόριον. ἔτι καὶ ἐπιτάττοντος 433a τοῦ νοῦ καὶ λεγούσης τῆς διανοίας φεύγειν τι ἢ διώκειν οὐ κινεῖται, ἀλλὰ κατὰ τὴν ἐπιθυμίαν πράττει, οἷον ὁ ἀκρατής. καὶ ὅλως δὲ ὀρώμεν ὅτι ὁ ἔχων τὴν ἰατρικὴν οὐκ ἰᾶται, ὡς ἑτέρου τινὸς κυρίου ὄντος τοῦ ποιεῖν κατὰ τὴν ἐπιστήμην, ἀλλ' 5 οὐ τῆς ἐπιστήμης. ἀλλὰ μὴν οὐδ' ἡ ὀρεξις ταύτης κυρία τῆς κινήσεως· οἱ γὰρ ἐγκρατεῖς ὀρεγόμενοι καὶ ἐπιθυμοῦντες οὐ πράττουσιν ὧν ἔχουσι τὴν ὀρεξιν, ἀλλ' ἀκολουθοῦσι τῷ νῷ.

15. τε ET, om. reliqui codd., leg. etiam Philop. 581, 39 Soph. || ἡ ante κίνησις om. pr. E (Trend.) || 16. ἡ post καὶ om. SW Soph., leg. Philop. Simpl. || 21. διὰ τέλους] διατελεῖ W y || εἰ οὖν...μηθέν] hic variant SVWX, vulgatam tuentur etiam Simpl. Soph. || 22. τι EV, om. reliqui codd. et Simpl., leg. etiam Them. Philop. Soph. || 23. ἐν om. LTV Them. Simpl., leg. etiam Soph. || 24. ἐστὶ solus E, om. reliqui codd., etiam Them. Soph. || 27. κινῶν] ἐκείνων pr. E || θεωρεῖ EL et, ut videtur, Them. 118, 9, νοεῖ legisse videtur etiam Soph. 141, 4 || 28. ἡ δὲ W Bek. Trend. Torst., αἰετὶ δὲ ἡ STUVXY et vet. transl., ἡ insert. E<sub>2</sub> (Bhl.) || φεύγοντος τι ἢ διώκ. τί omnes libri et scripti et ante Biehlum impressi exceptis E et Soph., τι prius om. Biehl || 30. φεύγειν ἢ διώκειν, exceptis EL et vet. transl., omnes scripti et ante Biehlum impressi || 31. τι φοβερὸν TUV || φοβεῖσθαι ἢ δὲ γε καρδία coni. Torst. || 433 a, 3. πράττειν E (Trend.) et y || ὁ om. STUXy, leg. Them. || 4. ὁ om. L, leg. Them. Soph. || τὴν om. TW, leg. Them. Soph. || οὐκ expellendum esse censet Christ.

to the animal progressive motion. That it is not the nutritive faculty is clear. For this motion is always directed to an end and is attended either by imagination or by appetency. No animal, which is not either seeking or avoiding something, moves except under compulsion. Moreover, if it were the nutritive faculty, plants also would be capable of locomotion and thus would have some part instrumental in producing this form of motion. Similarly it is not <sup>6</sup> nor sense, the sensitive faculty, since there are many animals which have sensation and yet are throughout their lives stationary and motionless. If, then, nature does nothing in vain and, except in mutilated and imperfect specimens, omits nothing that is indispensable, while the animals we are considering are fully developed and not mutilated—as is shown by the fact that they propagate their kind and have a period of maturity and a period of decline,—it follows that, if locomotion was implied in sensation, they would have had the parts instrumental to progression. Nor, <sup>7</sup> nor intellect, again, is it the reasoning faculty or what is called intellect that is the cause of motion. For the speculative intellect thinks nothing that is practical and makes no assertion about what is to be avoided or pursued, whereas motion always implies that we are avoiding or pursuing something. But, even if the mind has something of the kind before it, it does not forthwith prompt avoidance or pursuit. For example, it often thinks of something alarming or pleasant without prompting to fear ; the only effect is a beating of the heart or, when the thought is pleasant, some other bodily movement. Besides, even if the intellect issues the order and <sup>8</sup> the understanding bids us avoid or pursue something, still we are not thereby moved to act: on the contrary, action is determined by desire; in the case, for instance, of the incontinent man. And generally we see that, although a man possesses a knowledge of medicine, it does not follow that he practises ; and this implies that there is something else apart from the knowledge which determines action in accordance with the knowledge. Nor, again, is it solely appetency on which this motion depends. The continent, though they feel desire, that is appetite, do not act as their desires prompt, but on the contrary obey reason.

The cause  
of loco-  
motion  
not the  
nutritive  
faculty,

nor  
sense,

nor  
intellect,

nor ap-  
petency  
solely.

- 10 Φαίνεται δέ γε δύο ταῦτα <τὰ> κινούμεντα, ἡ ὄρεξις ἡ νοῦς, εἴ  
 τις τὴν φαντασίαν τιθείη ὡς νόησιν τινα· πολλὰ γὰρ παρὰ 10  
 τὴν ἐπιστήμην ἀκολουθοῦσι ταῖς φαντασίαις, καὶ ἐν τοῖς ἄλ-  
 λοις ζώοις οὐ νόησις οὐδὲ λογισμός ἐστιν, ἀλλὰ φαντασία.  
 ἄμφω ἄρα ταῦτα κινητικὰ κατὰ τόπον, νοῦς καὶ ὄρεξις,  
 2 νοῦς δὲ ὁ ἕνεκά του λογιζόμενος καὶ ὁ πρακτικός· διαφέρει  
 δὲ τοῦ θεωρητικοῦ τῷ τέλει. καὶ ἡ ὄρεξις ἕνεκά του πᾶσα· οὐ 15  
 γὰρ ἡ ὄρεξις, αὕτη ἀρχὴ τοῦ πρακτικοῦ νοῦ· τὸ δ' ἔσχατον  
 ἀρχὴ τῆς πράξεως. ὥστε εὐλόγως ταῦτα δύο φαίνεται τὰ  
 κινούμεντα, ὄρεξις καὶ διάνοια πρακτική· τὸ ὁρεκτὸν γὰρ κι-  
 νεῖ, καὶ διὰ τοῦτο ἡ διάνοια κινεῖ, ὅτι ἀρχὴ αὐτῆς ἐστὶ τὸ  
 3 ὁρεκτόν. καὶ ἡ φαντασία δὲ ὅταν κινῇ, οὐ κινεῖ ἄνευ ὁρέ- 20  
 ξεως. ἐν δὲ τι τὸ κινεῖν τὸ ὁρεκτικόν. εἰ γὰρ δύο, νοῦς καὶ  
 ὄρεξις, ἐκίνουν, κατὰ κοινὸν ἂν τι ἐκίνουν εἶδος. νῦν δὲ ὁ μὲν  
 νοῦς οὐ φαίνεται κινῶν ἄνευ ὁρέξεως· ἡ γὰρ βούλησις ὄρεξις·  
 ὅταν δὲ κατὰ τὸν λογισμὸν κινήται, καὶ κατὰ βούλησιν κι-  
 νεῖται. ἡ δ' ὄρεξις κινεῖ παρὰ τὸν λογισμὸν· ἡ γὰρ ἐπιθυ- 25  
 4 μία ὄρεξις τίς ἐστιν. νοῦς μὲν οὖν πᾶς ὁρθός ἐστιν· ὄρεξις  
 δὲ καὶ φαντασία καὶ ὁρθὴ καὶ οὐκ ὁρθή. διὸ ἀεὶ κινεῖ μὲν  
 τὸ ὁρεκτόν, ἀλλὰ τοῦτ' ἐστὶν ἡ τὸ ἀγαθὸν ἡ τὸ φαινόμενον  
 ἀγαθόν· οὐ πᾶν δέ, ἀλλὰ τὸ πρακτὸν ἀγαθόν. πρακτὸν δ'  
 ἐστὶ τὸ ἐνδεχόμενον καὶ ἄλλως ἔχειν. 30
- 5 ὅτι μὲν οὖν ἡ τοιαύτη δύναμις κινεῖ τῆς ψυχῆς ἡ καλουμέ-  
 νη ὄρεξις, φανερόν. τοῖς δὲ διαιροῦσι τὰ μέρη τῆς ψυχῆς, 433b  
 ἐὰν κατὰ τὰς δυνάμεις διαιρῶσι καὶ χωρίζωσι, πάμπολλα γίνονται,

9. ταῦτα δύο E L, δύο ταῦτα etiam Them. Soph. et vet. transl., post ταῦτα addendum τὰ conī. Bywater, p. 64, <τὰ> recepi || 10. θελή W Philop. || πολλὰ πολλοὶ conī. Bywater, cui assentitur Sussemihl, B. J. LXVII, 110 || 12. οὐ νόησις] βούλησις videtur habuisse pr. E (?) (Rr.) || οὐ] οὐχ ἡ L, ἡ S T V X Essen III, p. 56 || οὐδὲ] οὐ T V X et pr. E Essen, vulgatam utrobique tumentur Simpl. Philop. || 14. colon post πρακτικός sustulit et 15. δὲ unc. incl. Essen III, p. 56 || 15. οὐ γὰρ...16. νοῦ post., 18. τὸ ὁρεκτόν...20. ὁρεκτόν pr. edit. esse iudicat Torst., quod negat Noetel, p. 540, et refellit Pansch, Philologus XXI, p. 543, qui, ut Torstrikii contaminationem evitet, legendum proponit: οὐ γὰρ ἡ ὄρεξις αὐτῇ || 16. αὐτῇ X || 17. δύο ταῦτα S T U V X y Them. || τὰ om. E, insert. E<sub>2</sub> || 18. διάν. ἡ pr. T X || ὁρεκτόν E Them. vet. transl., ceteri codd. ὁρεκτικόν || 20. ὁρεκτόν E L Them. vet. transl., reliqui codd. ὁρεκτικόν || κινεῖ om. pr. E (Trend.) || 21. τὸ ante κινεῖ unc. incl. Essen III, p. 57 || ὁρεκτόν E L W Them. et fort. Philop. 585, 17 (cf. Hayducki ap. crit. ad loc.), et ὁρεκτόν et ὁρεκτικόν legi commemorat Simpl. 297, 31 sq., ὁρεκτικόν corr. E<sub>2</sub> et Torst., ὁρεκτόν defendere studet Pansch, l. 1, cui assentitur Belger in alt. ed. Trend. || 22. εἶδος ἐκίνουν S U V W X y et Simpl., εἶδος secludendum esse conī. Torst. || post νῦν δὲ addendum ἐπεὶ censet Essen, l. 1. || 25. κινεῖ καὶ Philop. et

The motive causes are apparently, at any rate, these two, either **10**  
 appetency or intelligence, if we regard imagination as  
 one species of thinking. For men often act contrary to  
 knowledge in obedience to their imaginings, while in the  
 other animals there is no process of thinking or reason-  
 ing, but solely imagination. Both these, then, are causes of loco-  
 motion, intelligence and appetency. By intelligence we mean that **2**  
 which calculates the means to an end, that is, the practical intellect,  
 which differs from the speculative intellect by the end at which  
 it aims. Appetency, too, is directed to some end in every case: for  
 that which is the end of desire is the starting point of the practical  
 intellect, and the last stage in this process of thought is the start-  
 ing point of action. Hence there is good reason for the view that  
 these two are the causes of motion, appetency and practical thought.  
 For it is the object of appetency which causes motion; and the  
 reason why thought causes motion is that the object of appetency is  
 the starting point of thought. Again, when imagination moves to **3**  
 action, it does not move to action apart from appetency. Thus there  
 is one single moving cause, the appetitive faculty. For, had there  
 been two, intelligence and appetency, which moved to action, still  
 they would have done so in virtue of some character common to both.  
 But, as a matter of fact, intellect is not found to cause motion  
 apart from appetency. For rational wish is appetency; and, when  
 anyone is moved in accordance with reason, he is also moved  
 according to rational wish. But appetency may move a man in  
 opposition to reason, for concupiscence is a species of appetency.  
 While, however, intellect is always right, appetency and imagina- **4**  
 tion may be right or wrong. Hence it is invariably the object of  
 appetency which causes motion, but this object may be either the  
 good or the apparent good. Not all good, however, but practical  
 good: where by practical good we mean something which may  
 not be good under all circumstances.

It is evident, then, that motion is due to the faculty of the **5**  
 soul corresponding to this object—I mean what is known as ap-  
 petency. But those who divide the soul into parts, if they divide  
 it according to its powers and separate these from one another,  
 will find that such parts tend to become very numerous: nutritive,

fort. Them. 119, 13 sq., scripsit Torst. || 26. νοῦς μὲν...ἐστίν unc. incl. Essen III, p. 57 ||  
 26. ὁρθὸς ἐστίν ὁρ. et 27. μὲν κινεῖ STUVWXY, ὁρθὸς ἐστίν etiam E<sub>2</sub> (Bhl.), κινεῖ μὲν  
 etiam Them., om. ἐστίν Bek. Trend. Torst. || 27. καὶ φαντασία] κατὰ φαντασίαν conl. Essen,  
 l. l. || 31. κινεῖ] κοινῇ W·Essen, l. l. || 433 b, 1. τοῖς δὲ διαιρούσι...4. θυμικόν alieno loco  
 inserta iudicat Torst., p. 216 || τὰ μέρη τῆς ψυχῆς sive post κατὰ transponenda sive delenda  
 censet Essen III, p. 58.

θρεπτικόν, αἰσθητικόν, νοητικόν, βουλευτικόν, ἔτι ὀρεκτικόν· ταῦτα γὰρ πλέον διαφέρει ἀλλήλων ἢ τὸ ἐπιθυμητικόν καὶ θυμικόν. ἐπεὶ δ' ὀρέξεις γίνονται ἐναντίαι ἀλλήλαις, τοῦτο δὲ 5 συμβαίνει ὅταν ὁ λόγος καὶ αἱ ἐπιθυμίαι ἐναντίαι ᾧσι, γίνεται δ' ἐν τοῖς χρόνου αἰσθησιν ἔχουσιν (ὁ μὲν γὰρ νοῦς διὰ τὸ μέλλον ἀνθέλκειν κελεύει, ἡ δ' ἐπιθυμία διὰ τὸ ἤδη· φαίνεται γὰρ τὸ ἤδη ἡδὺ καὶ ἀπλῶς ἡδὺ καὶ ἀγαθὸν ἀπλῶς, διὰ τὸ μὴ ὀρᾶν τὸ μέλλον), εἶδει μὲν ἐν ἅν εἴη τὸ κινοῦν τὸ 10 ὀρεκτικόν, ἢ ὀρεκτικόν, πρῶτον δὲ πάντων τὸ ὀρεκτόν (τοῦτο γὰρ κινεῖ οὐ κινούμενον τῷ νοηθῆναι ἢ φαντασθῆναι), ἀριθμῷ 7 δὲ πλείω τὰ κινοῦντα. ἐπειδὴ δ' ἐστὶ τρία, ἐν μὲν τὸ κινοῦν, δεύτερον δ' ᾧ κινεῖ, ἔτι τρίτον τὸ κινούμενον· τὸ δὲ κινοῦν διττόν, τὸ μὲν ἀκίνητον, τὸ δὲ κινοῦν καὶ κινούμενον· ἔστι δὲ τὸ μὲν 15 ἀκίνητον τὸ πρακτὸν ἀγαθόν, τὸ δὲ κινοῦν καὶ κινούμενον τὸ ὀρεκτικόν (κινεῖται γὰρ τὸ κινούμενον ἢ ὀρέγεται, καὶ ἡ ὀρεξις κίνησις τίς ἐστίν ἢ ἐνέργεια), τὸ δὲ κινούμενον τὸ ζῶον· ᾧ δὲ κινεῖ ὀργάνῳ ἡ ὀρεξις, ἡδὴ τοῦτο σωματικόν ἐστίν· διὸ ἐν τοῖς κοινοῖς σώματος καὶ ψυχῆς ἔργοις θεωρητέον περὶ 20 8 αὐτοῦ. νῦν δὲ ὡς ἐν κεφαλαίῳ εἰπεῖν, τὸ κινοῦν ὀργανικῶς ὅπου ἀρχὴ καὶ τελευτὴ τὸ αὐτό, οἷον ὁ γιγγλυμός· ἐνταῦθα γὰρ τὸ κυρτόν καὶ τὸ κοῖλον τὸ μὲν τελευτὴ τὸ δ' ἀρχή· διὸ τὸ μὲν ἡρεμεῖ τὸ δὲ κινεῖται, λόγῳ μὲν ἕτερα ὄντα, μεγέθει δ' ἀχώριστα· πάντα γὰρ ὥσει καὶ ἔλξει 25 νεύεται. διὸ δεῖ ὥσπερ ἐν κύκλῳ μένειν τι, καὶ ἐντεῦθεν ἄρ-

3. νοητικόν unc. incl. Essen, l. 1. || βουλευτικόν τι con. Essen, l. 1. || ἔτι δὲ STUVWX, δὲ insert. E<sub>2</sub>, δὲ om. Simpl. || 4. πλείον LSU, πλείω TVWXY Them. || ἀλλήλων ἢ] ἢ ἀλλήλων in interpr. Simpl. 299, 16 || τὸ om. L et E (Trend.) || 5. γιν. καὶ ἐν. SUV Them., καὶ om. etiam Soph. et, ut videtur, Philop. 586, 18. 21. 23 || 6. ὅταν δ τε λόγος καὶ αἱ ἐπιθυμίαι E (Bhl.) || 8. ἀνθέλκει, κελεύει δ' ἢ con. Essen III, p. 60 || 9. ἡδὴ insert. E<sub>2</sub>, leg. sine dubio Them. || 10. μὲν] μὲν οὖν insert. E<sub>2</sub> (Rr.), μὲν οὖν TVXY Them., μὲν δ W, οὖν om. etiam Simpl. || ἅν εἴη ἐν S U W, ἅν ἐν εἴη Simpl. || 11. parenthesis a πρῶτον ordiendam putat Bywater, p. 64, cui assentitur Susemihl, B. J. LXVII, 110 || 13. ἐπεὶ Ey Simpl., ἐπειδὴ etiam Philop. et ap. Philop. Alex. et Plut. Athen. || 14. ἔτι τρίτον E (Trend.) LS Torst., καὶ ἔτι τρίτον TXY Philop., ἔτι om. UVW Bek. Trend. || 15. κινοῦν καὶ om. E, leg. etiam Them. Simpl. Philop. || δὲ] δὴ con. Susemihl, Oecon. p. 86 || 16. τὸ post κιν. om. ELSUV || 17. ὀρεκτόν corr. E (Trend.) || ὀρεγόμενον TXY vet. transl. Torst. Belger in alt. ed. Trend. Biehl, κινοῦν sine dubio Philop. 591, 12 (v. quae ad loc. adnotavit Hayduck), reliqui κινούμενον, etiam Simpl. Bek. Trend., quibus assentitur Pansch, p. 545 || 18. κίνησις ὀρεξις EL et, ut videtur, Them. 120, 31 sq. Bek., ὀρεξις κίνησις etiam Simpl. vet. transl. Trend. Torst., ὀρεξις ἢ κίνησις Philop. || τίς om. T WXY, leg. Simpl. || ἢ ἐνέργεια E (Bek. Stapf.), ἢ ἐνέργεια E (Bhl.), ἢ ἐνέργεια U Philop. Rodier, καὶ ἐνέργεια Them., ἢ ἐνέργεια Bek. Trend., etiam

sensitive, intelligent, deliberative, with the further addition of an appetent part : for these differ more widely from one another than the concupiscent does from the passionate. Now desires arise 6 which are contrary to one another, and this occurs when-  
**Conflict of** ever reason and the appetites are opposed, that is, in  
**desires.** those animals which have a perception of time. For intelligence bids us resist because of the future, while appetite has regard only to the immediate present ; for the pleasure of the moment appears absolutely pleasurable and absolutely good because we do not see the future. Therefore, while generically the moving cause will be one, namely, the faculty of appetency, as such, and ultimately the object of appetency (which, without being in motion itself, causes motion by the mere fact of being thought of or imagined), numerically there is a plurality of moving causes.

Now motion implies three things, first, that which causes motion, 7  
**How the** secondly, that whereby it causes motion, and again,  
**animal** thirdly, that which is moved ; and of these that which  
**moves.** causes motion is twofold, firstly, that which is itself unmoved and, secondly, that which both causes motion and is itself moved. The unmoved movent is the practical good, that which is moved and causes motion is the appetitive faculty (for the animal which is moved is moved in so far as it desires, and desire is a species of motion or activity) and, finally, the thing moved is the animal. But the instrument with which desire moves it, once reached, is a part of the body : hence it must be dealt with under the functions common to body and soul. For the present, 8 it may be enough to say summarily that we find that which causes motion by means of organs at the point where beginning and end coincide ; as, for instance, they do in the hinge-joint, for there the convex and the concave are respectively the end and the beginning, with the result that the latter is at rest, while the former moves, convex and concave being logically distinct, but locally inseparable. For all animals move by pushing and pulling, and accordingly there must be in them a fixed point, like the centre in

Simpl., qui tamen et ἡ ἐνεργ. scribi (immo, id quod H scribebatur legi) posse dicit, ἡ ἐνεργεία scripsit Torst., *els ἐνέργειαν* coni. Chaignet, p. 433 || 21. αὐτῶν E (Trend.) y, etiam, nisi fallor, L U V W, quorum scripturam errore, ut videtur, typographico, Bek. αὐτῶν esse rettulit, αὐτοῦ etiam Them. Soph. et, ut videtur, Simpl. 303, 15 sq. || 22. ὅπου ἂν ἀρχῇ E W Soph. || γινγλυμός E et Trend., γινγλυμός X, γινγλυσμός S T V, γινγλυσιμός U W X, γινγλυσιμός Soph., γινγλυμος Simpl. Philop. et ap. Simpl. Alex. et Plut. Athen., γινγλυμός Them. (v. l. γινγλυσιμός) Bek. Torst. || 23. καὶ τὸ κοῖλον X et rc. E (Bus.) Soph., recepit Biehl, reliqui ante Biehlium omnes om. τὸ, etiam Bek. Trend. Torst. || γὰρ ante τελευτῇ insert. E<sub>2</sub> (Rr.) || 24. διὸ...κινεῖται in parenth. et post 25. ἀχώριστα punctum posuit Bywater, p. 64, cui assentitur Susemihl, B. J. LXVII, 110.

9 χεσθαι τὴν κίνησιν. ὅλως μὲν οὖν, ὥσπερ εἴρηται, ἥ ὀρεκτικὸν τὸ ζῶον, ταύτῃ ἑαυτοῦ κινήτικόν· ὀρεκτικὸν δὲ οὐκ ἄνευ φαντασίας· φαντασία δὲ πᾶσα ἡ λογιστικὴ ἡ αἰσθητική. ταύτης μὲν οὖν καὶ τὰ ἄλλα ζῶα μετέχει. 30

11 Σκεπτέον δὲ καὶ περὶ τῶν ἀτελῶν, τί τὸ κινεῖν ἐστίν, οἷς ἀφή μόνον ὑπάρχει αἰσθησις, πότερον ἐνδέχεται φαν- 434a  
τασίαν ὑπάρχειν τούτοις, ἡ οὐ, καὶ ἐπιθυμίαν. φαίνεται γὰρ λύπη καὶ ἡδονὴ ἐνοῦσα. εἰ δὲ ταῦτα, καὶ ἐπιθυμίαν ἀνάγκη. φαντασία δὲ πῶς ἂν ἐνείη; ἡ ὥσπερ καὶ κινεῖται ἀορίστως, 2 καὶ ταῦτ' ἐνεσσι μὲν, ἀορίστως δ' ἐνεσστιν. ἡ μὲν οὖν αἰσθητικὴ 5  
φαντασία, ὥσπερ εἴρηται, καὶ ἐν τοῖς ἄλλοις ζώοις ὑπάρχει, ἡ δὲ βουλευτικὴ ἐν τοῖς λογιστικοῖς (πότερον γὰρ πράξει τόδε ἡ τόδε, λογισμοῦ ἤδη ἐστὶν ἔργον· καὶ ἀνάγκη ἐνὶ μετρεῖν· τὸ μείζον γὰρ διώκει. ὥστε δύναται ἐν ἐκ πλειό-  
νων φαντασμάτων ποιεῖν). καὶ αἷτιον τοῦτο τοῦ δόξαν μὴ δο- 10  
κεῖν ἔχειν, ὅτι τὴν ἐκ συλλογισμοῦ οὐκ ἔχει, αὕτη δὲ ἐκεί-  
3 νην. διὸ τὸ βουλευτικὸν οὐκ ἔχει ἡ ὀρεξις· νικᾷ δ' ἐνίστε καὶ κινεῖ τὴν βούλησιν, ὅτε δ' ἐκείνη ταύτην, ὥσπερ σφαῖρα, ἡ ὀρεξις τὴν ὀρεξιν, ὅταν ἀκρασία γένηται· φύσει δὲ ἀεὶ ἡ ἄνω ἀρχικωτέρα καὶ κινεῖ· ὥστε τρεῖς φορὰς ἤδη κινεῖσθαι. 15

28. ἑαυτοῦ V Them., δ' αὐτοῦ EL Soph., reliqui ante Biehlium omnes αὐτοῦ || 31. καὶ om. E, leg. Soph. || ἀτελῶν etiam Them. Simpl. Soph., ἄλλων L, ἀπλῶν y || 434 a, i. αἰσθ. || ἡ αἰσθησις E, ἡ αἰσθησις L, ἀφή μόνῃ αἰσθησις ὑπάρχει Simpl. || 2. καὶ ἐπιθυμίαν unc. incl. Essen || 3. ἔχουσα E, ἐνοῦσα etiam Them. || 4. εἴη L S U V W || ἡ om. ES || ἀόριστος exceptis ES reliqui codd. omnes, ἀορίστως etiam Them. || 5. τοῖς L X et, ut videtur, Philop. 592, 26 Soph. 144, 37, ταῦτ' reliqui et corr. E || ἀόριστος y et fort. Simpl. in interpr. 307, 24, 308, 3 Soph. 144, 38, ἀορίστως etiam Them. 122, 11 Philop. || 6. φαντασία] ὀρεξις coni. Essen III, p. 62 || ἀλόγοις T W y Them. 121, 21, ἄλλοις etiam Simpl. in lemmate 308, 2 et, ut videtur, Philop. 592, 22: cf. tamen τὰ ἄλογα 593, 5 || 7. ἡ δὲ βουλευτικὴ...10. ποιεῖν in parenth. posuit Rodier || 7. πότερον...10. ποιεῖν in parenth. posui || 7. λογικοῖς W X y || 8. ἐστὶν ἤδη L || ἔργον ἐστὶν y || ἀνάγκη ἀεὶ μετρεῖν ἐνὶ W, vulgatam tuentur etiam Them. 121, 24 Philop. in interpr. 592, 30 || 8. καὶ ἀνάγκη...11. ἐκείνην unc. incl. Essen || 9. πλειόνων E, πλειόνων Them. Simpl. Philop. || 10. καὶ αἷτιον...12. ὀρεξις mutila vel corrupta esse censet Torst., leg. Simpl. Philop. et, ut videtur, Them. 121, 29 sqq. || 10. τοῦτο τοῦ] τοῦτου τὸ corr. E<sub>2</sub> (Rr.), quod legisse videtur Philop. in interpr. 593, 4 || 11. post οὐκ ἔχει add. <τὰλλα ζῶα> et αὕτη δὲ ἐκείνην hoc loco delevit Bywater, αὕτη δὲ κινεῖ, coll. a, 19, coni. Cornford || 12. διὸ <ἡ> τὸ βουλευτικόν...νικᾷ [δ'] ἐνίστε...βούλησιν, [ὅτε δ' ἐκείνη ταύτην] ὥσπερ σφαῖρα <σφαῖραν> coni. Essen III, p. 62 || 13. τὴν βούλησιν om. S V W || post βούλησιν colon vulg. || ὅτε δὲ κινεῖ γ' αὐτὴν pro ὅτε δ' ἐκείνη ταύτην coni. Cornford || σφαῖραν y || 13 et 14. ἡ δ' ὀρεξις τὴν ὀρ. coni. Trend., ἡ ἡ ὀρεξις τὴν ὀρ. coni. Chandler, totum locum sic restituendum esse: νικᾷ δ' ἐνίστε καὶ κ. τ. βούλησιν, ὅταν ἀκρασία γένηται· ὅτε δ' ἐκείνη ταύτην· ὅτε δ', ὥσπερ σφαῖραν σφαῖρα, ἡ ὀρ. τὴν ὀρ. coni. Torst., νικᾷ δ' ἐν. καὶ κ. τ. β., ὅταν ἀκρ. γ., ὅτε ἐκείνη ταύτην, ἡ



a circle, and from this the motion must begin. Thus, then, in 9 general terms, as already stated, the animal is capable of moving itself just in so far as it is appetitive: and it cannot be appetitive without imagination. Now imagination may be rational or it may be imagination of sense. Of the latter the other animals also have a share.

We must also consider what is the moving cause in those im-11

The low-  
est forms  
of life, how  
moved.

perfect animals which have only the sense of touch. Is it possible that they should have imagination and desire, or is it not? It is evident that they feel pleasure and

pain: and, if they have these, then of necessity they must also feel desire. But how can they have imagination? Shall we say that, as their movements are vague and indeterminate, so, though they have these faculties, they have them in a vague and indeter-

Delibera-  
tive imagi-  
nation.

minate form? The imagination of sense, then, as we 2 have said, is found in the other animals also, but deliberative imagination in those alone which have reason.—

For the task of deciding whether to do this or that already implies reasoning. And the pursuit of the greater good necessarily implies some single standard of measurement. Hence we have the power of constructing a single image out of a number of images.—And the reason why the lower animals are thought not to have opinion is that they do not possess that form of imagination which comes from inference, while the latter implies the former. And so ap-3 petency does not imply the deliberative faculty. But sometimes it overpowers rational wish and moves to action; at other times the latter, rational wish, overpowers the former, appetency. Thus one appetency prevails over another appetency, like one sphere over another sphere, in the case where incontinence has supervened. But by nature the upper sphere always has the predominance and is a moving cause, so that the motion is actually the resultant of three orbits.

δρεῖς τὴν ὄρ. conī. Steinhart, βούλησιν ὥσπερ σφαῖρα <ὅτε μὲν αὕτη ἐκείνην> ὅτε δ' ἐκείνη ταύτην ἢ δρεῖς τὴν ὄρ. conī. Bywater, p. 67: cf. ad a, 11, ὅτε δ' ἐκείνη ταύτην, ὥσπερ <ἢ ἄνω> σφαῖρα <τὴν κάτω, ὅτε δ'> ἢ δρεῖς τὴν ὄρ. ὅταν ἀκρ. γ. (φύσει δὲ ἀεὶ ἢ ἄνω ἀρχικ. καὶ κιν.), ὥστε conī. Zeller, p. 587, adn. 4, φύσει δὲ ἀεὶ ἢ ἄνω ἀρχικ. καὶ κινεῖ ἢ ὄρ. τὴν ὄρ. ὅταν ἀκρασία γέν., ὥστε conī. Busse, Hermes XXIII, 469 sq., νικᾷ δ' ἐνίοτε καὶ κινεῖ τὴν βούλησιν, ὅτε δ' ἐκείνη ταύτην, ὥσπερ ἢ ἄνω σφαῖρα (φύσει δὲ ἀεὶ ἢ ἄνω ἀρχ. καὶ κιν.) ὅτε δ' ἢ ὄρ. τὴν ὄρ., ὅταν ἀκολασία γένηται. ὥστε conī. Susemihl, B. J. LXVII, 11, vulgatam Rodier et certe Simpl. et vet. transl., vulgatam legisse videntur etiam Them. 121, 33 sqq. Soph. 145, 11 sqq., <ὅτε δ'> ante ὥσπερ de coniect. inseruit Biehl || 14. ἐν ἢ EL, etiam Philop. 593, 12, v. Hayducki ap. crit. ad loc., γένηται corr. E<sub>2</sub> || 15. ὥστε κατὰ τρεῖς διαφορὰς conī. Essen III, p. 63.

4 τὸ δ' ἐπιστημονικὸν οὐ κινεῖται, ἀλλὰ μένει. ἐπεὶ δ' ἡ μὲν καθόλου ὑπόληψις καὶ λόγος, ἡ δὲ τοῦ καθ' ἕκαστα (ἡ μὲν γὰρ λέγει ὅτι δεῖ τὸν τοιοῦτον τὸ τοιόνδε πράττειν, ἡ δὲ ὅτι τόδε τοῖνυν τοιόνδε, καὶ γὰρ δὲ τοιόσδε), ἤδη αὕτη κινεῖ ἡ δόξα, οὐχ ἡ καθόλου· ἡ ἄμφω, ἀλλ' ἡ μὲν ἡρεμούσα μάλ- 20 λον, ἡ δ' οὐ.

- 12 Τὴν μὲν οὖν θρεπτικὴν ψυχὴν ἀνάγκη πᾶν ἔχειν ὅτι περ ἂν ζῇ, καὶ ψυχὴν ἔχει ἀπὸ γενέσεως καὶ μέχρι φθορᾶς· ἀνάγκη γὰρ τὸ γενόμενον αὐξήσιν ἔχειν καὶ ἀκμὴν καὶ φθίσιν, ταῦτα δ' ἄνευ τροφῆς ἀδύνατον· ἀνάγκη ἄρα ἐνεῖναι 25 τὴν θρεπτικὴν δύναμιν ἐν πᾶσι τοῖς φυομένοις καὶ φθίνουσιν.
- 2 αἰσθῆσιν δ' οὐκ ἀναγκαῖον ἐν ἅπασιν τοῖς ζῶσιν· οὔτε γὰρ ὁσων τὸ σῶμα ἀπλοῦν, ἐνδέχεται ἀφ' ἑνὸς ἔχειν, [οὔτε ἄνευ ταύτης οἷόν τε οὐθὲν εἶναι ζῶν] οὔτε ὅσα μὴ δεκτικὰ τῶν 3 εἰδῶν ἄνευ τῆς ὕλης. τὸ δὲ ζῶν ἀναγκαῖον αἰσθῆσιν ἔχειν, 30 εἰ μὴθὲν μάτην ποιεῖ ἡ φύσις. ἐνεκά του γὰρ πάντα ὑπάρχει τὰ φύσει, ἡ συμπτώματα ἔσται τῶν ἐνεκά του. εἰ οὖν πᾶν σῶμα πορευτικόν, μὴ ἔχον αἰσθῆσιν, φθείροιτο ἂν καὶ εἰς τέλος οὐκ ἂν ἔλθοι, ὃ ἐστὶ φύσεως ἔργον· πῶς γὰρ θρέ- 434b ψεται; τοῖς μὲν γὰρ μονίμοις ὑπάρχει τὸ ὅθεν πεφύκασιν.
- 4 οὐχ οἷόν τε δὲ σῶμα ἔχειν μὲν ψυχὴν καὶ νοῦν κριτικόν, αἰσθῆσιν δὲ μὴ ἔχειν, μὴ μόνιμον ὄν, γενητὸν δέ. [ἀλλὰ μὴν οὐδὲ ἀγένητον·] διὰ τί γὰρ ἔξει; ἡ γὰρ τῇ ψυχῇ βέλτιον 5 ἢ τῷ σώματι. νῦν δ' οὐδέτερον· ἡ μὲν γὰρ οὐ μᾶλλον νοήσει, τὸ δ' οὐθὲν ἔσται μᾶλλον δι' ἐκεῖνο. οὐθὲν ἄρα ἔχει ψυχὴν σῶμα μὴ μόνιμον ἄνευ αἰσθήσεως.

16. κινεῖ T W X, vel κινεῖ vel κινεῖται hic legi commemorat Simpl. 311, 9 sq. || 17. ἕκαστων E y Them. || 19. τοῖνυν E, sed ita ut lacuna sit minuta inter το et νυν (Trend. Bus.) Bek. Trend., νῦν X y, om. L S T U V W, τοῖνυν Simpl. Torst. || 19. ἡ δὲ αὕτη...20. καθόλου, ἡ ἄμφω coni. Spengel in com. ad Ar. rhet. II, 300 || 20. καθόλου; ἡ scripsit Torst. || 23. καὶ ἔχειν coni. Christ, ἔχῃ X y Bek. Trend., ἔχει etiam Philop. Torst., ἔχειν videtur legisse Them. 122, 22 || καὶ om. T U V X y Bek. Trend. || 27. alios ζῶσιν, alios ζῶντας legere tradit Philop. 598, 17 sq. || 28. ὅσων] ὧν E L Philop., ὅσων etiam Simpl. 320, 38 et, ut videtur, Them. 122, 29 sq. || οὔτε...29. ζῶν suspecta erant Trend., unc. incl. Torst., leg. Simpl., non videtur legisse Them. Philop. Soph. || 29. οὐθὲν οἷόν τε L T W, οἷόν τε οὐθὲν etiam Simpl. || 30. τὸ δὲ ζῶν] τί δὲ ζῶν coni. Essen III, p. 64 || 31. μὴ] exit E || ἅπαντα L T V X || 33. pro πᾶν coni. Torst. εἴη vel γένοιτο, cui assentitur Dittenberger, p. 1615, pro ἔχον coni. Trend. ἔχοι, quod probant Steinhart et Sussemlil, Oecon. p. 86, post πορευτικόν virgulam posuit Biehl || 434 b, 2. τὰ ταῦτα W, τοῦτο S T U V X y Trend. || ὅθι U, ὅτι S V X, ὅθεν etiam Philop. Simpl. || 4. γενητὸν et 5. ἀγένητον Simpl. Them. Philop. ex cod. D Hayduck Torst., reliqui

The cognitive faculty, however, is not subject to motion, but is 4  
 at rest. The major premiss is universal, whether judg-  
 The practical syllogism. ment or proposition, while the minor has to do with a  
 particular fact: for, while the former asserts that such and  
 such a person ought to do such and such an act, the latter asserts  
 that a particular act is one of the sort and that I am such a person.  
 Now it is the latter judgment which at once moves to action, not the  
 universal. Or shall we say that it is both together, but the one is  
 akin to the unmoved movent, the other is not?

Every living thing, then, must have the nutritive soul and in fact 12  
 has a soul from its birth till its death. For what has  
 Teleology: nutritive soul necessary. been born must necessarily grow, reach maturity and  
 decline, and for these processes nutriment is indispens-  
 able. It follows, then, of necessity that the nutritive faculty is  
 present in all things that grow and decay. But sensation is not 2  
 necessarily present in all living things. For wherever the body is  
 uncompounded there can be no sense of touch [*yet without this sense  
 animal existence is impossible*]: nor, again, in those living things  
 which are incapable of receiving forms apart from matter. But 3  
 the animal must of necessity possess sensation, if nature  
 Sensation necessary to animals. makes nothing in vain: for everything in nature sub-  
 serves an end or else will be an accessory of things  
 which subserve an end. Now every living body having the power  
 of progression and yet lacking sensation would be destroyed and  
 never reach full development, which is its natural function. For  
 how in such a case is it to obtain nutriment? Motionless animals,  
 it is true, have for nutriment that from which they have been  
 developed. But a body, not stationary, but produced by genera- 4  
 tion, cannot possibly have a soul and an intelligence capable of  
 judging without also having sensation. [*Neither can it, if it be not  
 generated.*] For why should it have the one without the other?  
 Presumably for the advantage either of the soul or of the body.  
 But neither of these alternatives is, in fact, admissible. For the  
 soul will be no better able to think, and the body will be no  
 better off, for the absence of sensation. We conclude, then, that no  
 body that is not stationary has soul without having sensation.

ante Torst. omnes γεννητὸν et ἀγέννητον, etiam Them. v.l. Philop. ed. Trincavelli || ἀλλὰ ..  
 5. ἀγέννητον unc. inclusit Torst., leg. quidem omnes libri scripti et impressi, etiam Them.  
 Philop. 599, 32 Soph. et apud Simpl. et Philop. Alex. et Plut. et vet. transl., omisit Simpl.,  
 qui annotat 320, 28: ἔν τισι δὲ ἀντιγράφους πρόσκειται τὸ ἀλλὰ μὴν οὐδὲ ἀγέννητον || 4. οὐ μὴν  
 ἀλλὰ ἀγ. coni. Essen III, p. 65 || 5. γὰρ οὐχ ἔξει T U V W y Plut. apud Simpl. et apud  
 Philop. et vet. transl., om. οὐχ reliqui, etiam Them. Philop. Alex. || verbis διὰ τὸ γὰρ ἔξει (sc.  
 τὸ μόνιμον); ἢ γὰρ...γ. δι' ἐκείνου parenthesi inclusis apodosin sententiae conditionalis ei οὐν  
 πᾶν ab οὐθὲν ἀρα ἔχει incipere statuit Christ || 7. τῷ L W, τὸ etiam Them.

5 ἀλλὰ μὴν εἴγε αἰσθησιν ἔχει, ἀνάγκη τὸ σῶμα εἶναι ἢ ἀπλοῦν  
 ἢ μεικτόν. οὐχ οἶόν τε δὲ ἀπλοῦν· ἀφήν γὰρ οὐχ ἔξει, ἔστι δὲ 10  
 6 ἀνάγκη ταύτην ἔχειν. τοῦτο δὲ ἐκ τῶνδε δῆλον. ἐπεὶ γὰρ τὸ  
 ζῶον σῶμα ἐμψυχόν ἐστι, σῶμα δὲ ἅπαν ἀπτόν, ἀπτὸν δὲ τὸ  
 αἰσθητὸν ἀφήν, ἀνάγκη καὶ τὸ τοῦ ζώου σῶμα ἀπτικὸν  
 εἶναι, εἰ μέλλει σῶζεσθαι τὸ ζῶον. αἱ γὰρ ἄλλαι αἰσθή- 15  
 σεις δι' ἐτέρων αἰσθάνονται, οἷον ὁσφρησις ὅψις ἀκοή· 15  
 ἀπτόμενον δέ, εἰ μὴ ἔξει αἰσθησιν, οὐ δυνήσεται τὰ μὲν  
 φεύγειν τὰ δὲ λαβεῖν. εἰ δὲ τοῦτο, ἀδύνατον ἔσται σῶζε-  
 7 σθαι τὸ ζῶον. διὸ καὶ ἡ γεῦσις ἐστὶν ὥσπερ ἀφή τις· τρο-  
 φῆς γὰρ ἐστὶν, ἡ δὲ τροφή τὸ σῶμα τὸ ἀπτόν. ψόφος δὲ  
 καὶ χρῶμα καὶ ὁσμὴ οὐ τρέφει, οὐδὲ ποιεῖ οὐτ' αὔξησιν οὔτε 20  
 φθίσιν. ὥστε καὶ τὴν γεῦσιν ἀνάγκη ἀφήν εἶναί τινα, διὰ  
 τὸ τοῦ ἀπτοῦ καὶ θρεπτικοῦ αἰσθησιν εἶναι· αὐταὶ μὲν οὖν  
 ἀναγκαῖαι τῷ ζώῳ, καὶ φανερόν ὅτι οὐχ οἶόν τε ἄνευ 25  
 8 ἀφῆς εἶναι ζῶον. αἱ δὲ ἄλλαι τοῦ τε εὖ ἔνεκα καὶ γένει  
 ζώων ἤδη οὐ τῷ τυχόντι, ἀλλὰ τισίν, οἷον τῷ πορευτικῷ 25  
 ἀνάγκη ὑπάρχειν· εἰ γὰρ μέλλει σῶζεσθαι, οὐ μόνον δεῖ  
 ἀπτόμενον αἰσθάνεσθαι ἀλλὰ καὶ ἀποθεῖν. τοῦτο δ' ἂν εἴη,  
 εἰ διὰ τοῦ μεταξὺ αἰσθητικὸν εἴη τῷ ἐκείνῳ μὲν ὑπὸ τοῦ  
 9 αἰσθητοῦ πάσχειν καὶ κινεῖσθαι, αὐτὸ δ' ὑπ' ἐκείνου. ὥσπερ  
 γὰρ τὸ κινεῖν κατὰ τόπον μέχρι του μεταβάλλειν ποιεῖ, 30  
 καὶ τὸ ὦσαν ἕτερον ποιεῖ ὥστε ὠθεῖν, καὶ ἔστι διὰ μέσου ἡ  
 κίνησις, καὶ τὸ μὲν πρῶτον κινεῖ καὶ ὠθεῖ οὐκ ὠθούμενον,  
 τὸ δ' ἔσχατον μόνον ὠθεῖται οὐκ ὦσαν, τὸ δὲ μέσον ἄμφω,  
 πολλὰ δὲ μέσα, οὕτω <καὶ> ἐπ' ἀλλοιώσεως, πλήν ὅτι μένοντος 435 a  
 ἐν τῷ αὐτῷ τόπῳ ἀλλοιοῖ, οἷον εἰ εἰς κηρὸν βάψει τις,  
 μέχρι τούτου ἐκινήθη, ἕως ἔβαψεν· λίθος δὲ οὐδέν, ἀλλ'

9. ἔχοι L, om. S U V || 9. ἀνάγκη...13. ἀφή unc. incl. Essen || 17. ἐστι T X, ἔσται etiam Philop. || 18. διὸ καὶ...19. ἀπτόν post., 21. ὥστε...22. εἶναι pr., edit. esse iudicat Torst. || 19. post ἀπτόν addendum καὶ θρεπτικόν censet Bywater, p. 67 || 24. τὸ ζῶον L, τὸ om. Them. || 27. σῶζεσθαι T W X, αἰσθάνεσθαι etiam Soph. || 30. του Torst. et, ut videtur, Them. 124, 30, Soph. interpretatur μέχρι τινός, τούτου S, reliqui ante Torst. omnes τοῦ || 31. ὦσαν] ὠσθὲν coni. Torst., ὦσαν etiam Simpl. Soph. et, ut videtur, Philop. 605, 1 || καὶ ἔστι...32. κίνησις] καὶ ἔστι ταῦτα διὰ μέσου coni. Torst., vulg. tuetur Soph. || 32. καὶ τὸ μὲν πρ. W Torst., τὸ δὲ πρ. L, καὶ τὸ πρ. μὲν T X, καὶ μὲν δὴ τὸ πρ. S U, καὶ δὴ τὸ μὲν πρ. V y Bek. Trend. || κινεῖ καὶ ὠθεῖ L y Soph., reliqui ante Biehlium omnes κινεῖν ὠθεῖ, κινεῖν unc. incl. Torst. || 33. ὦσαν] ὠθούν X || 435 a, 1. οὕτω δὴ ἐπ' vel οὕτω δὴ καὶ ἐπ' coni. Torst., οὕτω vel οὕτως καὶ ἐπὶ Them. Simpl. Philop. Soph. vet. transl., om. καὶ omnes codd., <καὶ> in textum recepit Biehl || μένοντα V W X Trend., μένοντος etiam

But, further, the body, assuming that it has sensation, must 5  
 be either simple or composite. But it cannot be simple,  
 for then it would not have touch, and this sense is indis-  
 pensable. This is clear from the following considerations. 6  
 The animal is an animate body. Now body is always  
 tangible and it is that which is perceptible by touch which is tan-  
 gible: from which it follows that the body of the animal must have  
 tactile sensation, if the animal is to survive. For the other senses,  
 that is to say, smell, sight, hearing, have media of sensation, but  
 a being which has no sensation will be unable when it comes into  
 contact with things to avoid some and seize others. And if  
 this is so, it will be impossible for the animal to survive. This 7  
 is why taste is a kind of touch, for taste is of nutriment and  
 nutriment is body which is tangible; whereas sound, colour and  
 smell afford no nourishment and promote neither growth nor  
 decay. So that taste also must be a kind of touch, because it is  
 a sensation of that which is tangible and nutritive. These two  
 senses, then, are necessary to the animal, and it is plain that  
 without touch no animal can exist.

But the other senses are means to well-being, and are necessary, 8  
 not to any and every species of animal, but only to cer-  
 tain species, as, for example, those capable of locomotion.  
 For, if the animal capable of locomotion is to survive, it  
 must have sensation, not only when in contact with any-  
 thing, but also at a distance from it. And this will be secured if it  
 can perceive through a medium, the medium being capable  
 of being acted upon and set in motion by the sensible  
 object, and the animal itself by the medium. Now that 9  
 which causes motion from place to place produces a change oper-  
 ating within certain limits, and that which propels causes the thing  
 propelled to propel in turn, the movement being transmitted  
 through something intermediate. The first in the series initiates  
 motion and propels without being itself propelled, while the last  
 is simply propelled without propelling; the numerous middle  
 terms of the series both propel and are propelled. So it is also  
 with qualitative change, except that what is subject to this  
 change remains in the same place. Suppose we were to dip  
 something into wax, the movement in the wax would extend just  
 so far down as we had dipped the object, whereas in the like case

ὑδωρ μέχρι πόρρω· ὁ δ' αἴρ ἐπὶ πλείστον κινεῖται καὶ ποιεῖ καὶ πάσχει, ἐὰν μένῃ καὶ εἰς ἧ'. διὸ καὶ περὶ ἀνα- 5 κλάσεως βέλτιον ἢ τὴν ὄψιν ἐξιούσαν ἀνακλᾶσθαι, τὸν ἀέρα πάσχειν ὑπὸ τοῦ σχήματος καὶ χρώματος, μέχρι περ οὗ ἂν ἦ εἰς. ἐπὶ δὲ τοῦ λείου ἐστὶν εἰς· διὸ πάλιν οὗτος τὴν ὄψιν κινεῖ, ὥσπερ ἂν εἰ τὸ ἐν τῷ κηρῷ σημεῖον διεδίδοδοτο μέχρι τοῦ πέρατος.

10

13 Ὅτι δ' οὐχ οἶόν τε ἀπλοῦν εἶναι τὸ τοῦ ζώου σῶμα, φανερόν, λέγω δ' οἶον πύρινον ἢ ἀέρινον. ἄνευ μὲν γὰρ ἀφῆς οὐδεμίαν ἐνδέχεται ἄλλην αἰσθησιν ἔχειν· τὸ γὰρ σῶμα ἀπτικὸν τὸ ἔμψυχον πᾶν, ὥσπερ εἴρηται. τὰ δὲ ἄλλα ἔξω γῆς αἰσθητήρια μὲν ἂν γένοιτο, πάντα δὲ τῷ 15 δι' ἑτέρου αἰσθάνεσθαι ποιεῖ τὴν αἰσθησιν καὶ διὰ τῶν με- ταξύ. ἡ δ' ἀφή τῷ αὐτῶν ἄπτεσθαί ἐστιν, διὸ καὶ τοῦνομα τοῦτο ἔχει. καίτοι καὶ τὰ ἄλλα αἰσθητήρια ἀφῇ αἰσθάνε- ται, ἀλλὰ δι' ἑτέρου· αὕτη δὲ δοκεῖ μόνη δι' αὐτῆς. ὥστε τῶν μὲν τοιούτων στοιχείων οὐθὲν ἂν εἴη σῶμα τοῦ ζώου. οὐδὲ δὴ 20 γῆινον. πάντων γὰρ ἡ ἀφή τῶν ἀπτῶν ἐστὶν ὥσπερ μεσότης, καὶ δεκτικὸν τὸ αἰσθητήριον οὐ μόνον ὅσαι διαφοραὶ γῆς εἰσίν, ἀλλὰ καὶ θερμοῦ καὶ ψυχροῦ καὶ τῶν ἄλλων ἀπτῶν ἀπάν- των. καὶ διὰ τοῦτο τοῖς ὁστοῖς καὶ ταῖς θριξὶ καὶ τοῖς τοι- ούτοις μορίοις οὐκ αἰσθανόμεθα, ὅτι γῆς ἐστίν. καὶ τὰ φυτὰ 25 διὰ τοῦτο οὐδεμίαν ἔχει αἰσθησιν, ὅτι γῆς ἐστίν· ἄνευ δὲ α- 435 b φῆς οὐδεμίαν οἶόν τε ἄλλην ὑπάρχειν, τοῦτο δὲ τὸ αἰσθητήρι- ον οὐκ ἐστὶν οὔτε γῆς οὔτε ἄλλου τῶν στοιχείων οὐδενός.

2 φανερόν τοῖνυν ὅτι ἀνάγκη μόνης ταύτης στερισκόμενα τῆς αἰσθήσεως τὰ ζῶα ἀποθνήσκουν· οὔτε γὰρ ταύτην 5 ἔχειν οἶόν τε μὴ ζῶον, οὔτε ζῶον ὃν ἄλλην ἔχειν ἀνάγκη πλὴν ταύτης. καὶ διὰ τοῦτο τὰ μὲν ἄλλα αἰσθητὰ ταῖς ὑπερβολαῖς οὐ διαφθείρει τὸ ζῶον, οἶον χρῶμα καὶ ψόφος καὶ ὁσμὴ, ἀλλὰ μόνον τὰ αἰσθητήρια, ἂν μὴ

4. post πόρρω punctum Bek. Trend. Torst., colon Biehl, virgulam Susemihl B. J. IX, 352 || 5. μένῃ S U X y Them. Philop., μένῃ etiam Soph. || περὶ ἀνακλάσεως unc. incl. Torst. Essen III, p. 66, leg. Them. Philop. Soph. || 6. ἀνακλᾶσθαι L W Them. Soph. Trend. Torst., reliqui ante Trend. omnes κλᾶσθαι || 7. ἂν οὐ ἢ εἰς L, οὐ ἂν ἢ εἰς T W X Soph. Biehl, reliqui ante Biehlum omnes οὐ ἂν εἰς ἦ || 8. τοῦ λείου] τελείου X y || πάλιν om. L, leg. Them. Philop., πάλιν καὶ W || 9. ἐκίνει X || 13. ἄλλην ἐνδέχεται S U V || 17. ἀπτῶν W, τῶν ἀπτῶν y, αὐτῶν etiam Them. Simpl. Soph. 148, 21 || 18. καίτοι... 19. αὐτῆς unc. incl. Essen III, p. 67 || 19. ἐτέρων L V || 435 b, 1. αἰσθῆσιν ἔχει L W || εἰσίν T V X || 2. ἄλλην οἶόν τε V W y, οἶόν τε ἄλλην etiam Soph. || 6. οἶόν τε μὴ ζῶον ὃν

a stone is not moved at all, while water is disturbed to a great distance and air is disturbed to the farthest extent possible and acts and is acted upon as long as it remains unbroken. And, to revert to the reflection of light, that is why, instead of holding that the visual ray leaving the eye is reflected, it would be better to say that the air is acted upon by the shape and colour, so long as it is one and unbroken. This is the case over any smooth surface: and accordingly the air acts on the organ of sight in turn, just as if the impress on the wax had penetrated right through to the other side.

It is evident that the body of an animal cannot be uncom- **13**

A mixture  
of several  
elements  
necessary  
to the ani-  
mal body.

pounded; I mean, it cannot consist entirely of fire, for instance, or of air. An animal, unless it has touch, can have no other sense, the animate body being always, as we have remarked, capable of tactile sensation. Now the other elements, with the exception of earth, would make sense-organs: but it is always indirectly and through media that such organs effect sensation. Touch, however, acts by direct contact with objects: hence its name. The other sense-organs, it is true, also perceive by contact, but it is by indirect contact: touch alone, it would seem, perceives directly in and through itself. Thus, then, no one of the three elements referred to can constitute the body of the animal. Nor indeed can it be of earth. For touch is a sort of mean between all tangible qualities, and its organ is receptive not only of all the distinctive qualities of earth, but also of heat and cold and all other tangible qualities. And this is why we do not perceive anything with our bones and our hair and such parts of us, namely, because they are of earth. And for the same reason plants, too, have no sensation, because they are composed of earth. Without touch, however, there can be no other sense; and the organ of this sense does not consist of earth nor of any other single element.

Thus it is evident that this is the only sense the loss of which **2** necessarily involves the death of the animal. For it is not possible for anything that is not an animal to have this sense, nor is it necessary for anything that is an animal to have any other sense besides this. And this explains another fact. The other sensibles—I mean, colour, sound, odour—do not by their excess destroy the animal, but only the corresponding sense-organs: except incidentally, as when concurrently

Why  
tangibles  
in excess  
destroy  
life.

ἔχειν W, οὐδὲν τε ἔχειν μὴ ζῶον ὃν γ, οὐδὲν τε μὴ ζῶον ἔχειν αὐτὴν Soph., μὴ ἔχον οὐδὲν τε εἶναι ζῶον coni. Steinhart, οὐδὲν τε μὴ ἔχειν ζῶον coni. Hayduck, progr. Gryph. 7 || ὃν ante ἀλλήν om. S U V γ Soph., ζῶον ὃν delendum esse censet Hayduck l. 1. || 7. ταύτην U X γ et T (supra posito s).

κατὰ συμβεβηκός, οἷον ἂν ἅμα τῷ ψόφῳ ὥσις γένηται 10  
καὶ πληγῇ, καὶ ὑπὸ ὀραμάτων καὶ ὁσμῆς ἕτερα κινεῖται,  
ἀ τῇ ἀφῇ φθείρει. καὶ ὁ χυμὸς δὲ ἥ ἅμα συμβαίνει  
3 ἀπτικὸν εἶναι, ταύτῃ φθείρει. ἡ δὲ τῶν ἀπτῶν ὑπερβολή,  
οἷον θερμῶν καὶ ψυχρῶν καὶ σκληρῶν, ἀναιρεῖ τὸ ζῶον·  
παντὸς μὲν γὰρ ὑπερβολὴ αἰσθητοῦ ἀναιρεῖ τὸ αἰσθητήριον, 15  
ὥστε καὶ τὸ ἀπτὸν τὴν ἀφήν, ταύτῃ δὲ ὥρισταί τὸ ζῆν·  
ἄνευ γὰρ ἀφῆς δέδεικται ὅτι ἀδύνατον εἶναι ζῶον. διὸ ἡ  
τῶν ἀπτῶν ὑπερβολὴ οὐ μόνον τὸ αἰσθητήριον φθείρει, ἀλλὰ  
καὶ τὸ ζῶον, ὅτι ἀνάγκη μόνην ἔχειν ταύτην. τὰς δ' ἄλ-  
λας αἰσθήσεις ἔχει τὸ ζῶον, ὥσπερ εἴρηται, οὐ τοῦ εἶναι 20  
ἐνεκα ἀλλὰ τοῦ εἶναι, οἷον ὄψιν, ἐπεὶ ἐν ἀέρι καὶ ὕδατι,  
ὅπως ὄρα, ὅλως δ' ἐπεὶ ἐν διαφανεῖ, γεῦσιν δὲ διὰ τὸ  
ἡδὺ καὶ λυπηρόν, ἵνα αἰσθάνηται τὸ ἐν τροφῇ καὶ ἐπιθυμῇ  
καὶ κινῆται, ἀκοὴν δὲ ὅπως σημαίνεται τι αὐτῇ, γλῶτταν  
δὲ ὅπως σημαίνει τι ἐτέρῳ. 25

15. ὑπερβολὴ αἰσθητοῦ L W Them. Soph., recepit Biehl, αἰσθητικοῦ ὑπερβολὴ T U V, reliqui ante Biehlum omnes αἰσθητοῦ ὑπερβολή || 16. διώρισταί ST U X, ὥρισταί etiam Soph. || ζῶον T X, quam lectionem probat H. Jackson, ζῆν etiam Soph. || 22. ὅπως ὄρα post διαφανεῖ transponendum esse dubitanter coni. Susemihl, Oecon. p. 86 || δὲ διὰ] τε διὰ T V y Bek. Trend., δὲ etiam Soph. Torst. || 24. σημαίνῃ T U X, σημαίνει SV W y Soph. Bek. Trend., σημαίνεται (om. τι) L Torst., σημαίνεται τι etiam sine dubio Them. et vet. transl. || αὐτῇ restituit Torst., vulgo αὐτῷ || 24. γλῶτταν... 25. ἐτέρῳ unc. incl. Torst. Essen III, p. 68, leg. Them. Philop. Soph. et vet. transl.



with the sound some thrust or blow is given, or when objects of sight or smell move something else which destroys by contact. Flavour, again, destroys only in so far as it is at the same time tactile. Tangible qualities, on the other hand, as heat, cold and 3 hardness, if in excess, are fatal to the living animal. For excess of any sensible object is fatal to the organ, and so consequently excess of the tangible object is fatal to touch. And it is by this sense that the life of the animal is defined, touch having been proved to be indispensable to the existence of an animal. Hence excess in tangible qualities destroys not only the sense-organ, but also the animal itself. For touch is the one sense that the animal cannot do without. The other senses which it possesses are, as we have said, the means, not to its being, but to its well-being. Thus the animal has sight to see with, because it lives in air or water or, speaking generally, in a transparent medium. It has taste on account of what is pleasant and painful, to the end that it may perceive what is pleasant in food and feel desire and be impelled to movement. It has hearing in order that information may be conveyed to it, and a tongue, that in its turn it may convey information to its fellow.

The  
higher  
senses  
necessary  
to well-  
being.

# CODICIS E FRAGMENTA RECENSIONIS A VULGATA DIVERSAE.

## I.

lib. II, 412a, 3—12.

E. fol. 186 v<sup>o</sup>.

Ἐπεὶ δὲ τὰ παραδεδομένα περὶ ψυχῆς παρὰ τῶν ἄλλων, ἐφ' ὅσον ἕκαστος ἀπεφήνατο τῶν πρότερον, εἴρηται σχεδόν, νῦν ὥσπερ ἐξ ἀρχῆς πάλιν ἐπανίωμεν πειρώμενοι διορίσαι τί ἐστὶν ἡ ψυχὴ καὶ τίς ἂν εἴη λόγος αὐτῆς κοινότατος· χωρίζομεν δὴ τὰς μὲν οὐσίας ἀπὸ τῶν ὄντων τῶν ἄλλων· 5 τῆς δὲ οὐσίας τὸ μὲν ὡς ὕλην λέγεσθαι τίθεμεν, ὃ καθ' αὐτὸ <μὲν οὐκ ἔστι τόδε τι, τὸ> δὲ ἡ μορφή, τὸ δ' ἐκ τούτων. ἔστι δ' ἡ μὲν ὕλη δυνάμει, τὸ δ' εἶδος ἐντελέχεια, αὕτη δ' ὑπάρχει διχῶς, ἥ γὰρ ὡς ἡ ἐπιστήμη, ἥ ὡς τὸ θεωρεῖν, οὐσίαι δὲ μάλιστα δοκοῦσιν εἶναι τὰ σώματα καὶ τούτων τὰ 10 φυσικά· ἀρχαὶ γὰρ....

## II.

lib. II, 414b, 13—416a, 9.

E. fol. I, r<sup>o</sup>.

Ὁ δὲ χυμὸς ὥσπερ ἡδυσμα τούτοις ἐστίν· διόπερ ὅσα ἔχει τῶν ζώων ἀφήν, πᾶσιν ὑπάρχει καὶ ὄρεξις. περὶ δὲ φαντασίας ἀδηλον καὶ ὕστερον ἐπισκεπτέον. ἐνίοις δὲ ταυτά 5 τε ὑπάρχει καὶ τὸ κατὰ τόπον κινητικόν, τοῖς δ' ἔτι πρὸς τούτοις διάνοια καὶ νοῦς, οἷον ἀνθρώπῳ καὶ εἴ τι ἄλλο 5 ζῶον ἕτερόν ἐστι τοιοῦτον ἢ καὶ τιμιώτερον. δῆλον οὖν ὡς ὁμοίως σχήματος καὶ ψυχῆς εἷς ἂν εἴη λόγος. οὔτε γὰρ ἐκεῖ σχῆμα παρὰ τρίγωνόν ἐστι καὶ τὰ ἐφεξῆς, οὔτ' ἐνταῦθα ψυχὴ παρὰ τὰς εἰρημένας. γένοιτο δ' ἂν καὶ ἐπὶ τῶν σχημάτων λόγος, ὃς ἐφαρμόσει <μὲν> πᾶσιν, οὐκ ἔσται 10.

I. 7. μὲν οὐκ ἔστι τόδε τι, τὸ supplevit Torst. || II. 5. τούτοις καὶ E (Bus.) || 8. παρὰ τὸ τρ. conl. Torst. || 10. μὲν om. E.

μέντοι ἴδιος οὐθενὸς σχήματος. ὁμοίως δὲ καὶ ἐπὶ ταῖς εἰρη-  
 μέναις ψυχαῖς. διὸ γελοῖον ζητεῖν τὸν κοινὸν λόγον καὶ ἐπ'  
 ἄλλων καὶ ἐπὶ τούτων, ὃς οὐκ ἔσται οὐθενὸς τῶν ὄντων ἴδιος,  
 οὐδὲ κατὰ τὸ οἰκεῖον καὶ ἄτομον εἶδος, τὸν τοιοῦτον ἀφέντας.  
 παραπλησίως δὲ ὥσπερ καὶ ἐπὶ τῶν σχημάτων, ἔχει καὶ τὰ 15  
 περὶ τὴν ψυχὴν· αἰεὶ γὰρ ἐν τῷ ἐφεξῆς ὑπάρχει δυνάμει τὸ πρότε-  
 ρον ἐπὶ τε τῶν σχημάτων καὶ ἐπὶ τῶν ἐμφύχων, λέγω δ' ὥσπερ  
 ἐν τετραγώνῳ μὲν τρίγωνον, ἐν αἰσθητικῷ δὲ τὸ θρεπτικόν. ὥστε  
 καὶ καθ' ἕκαστον δεῖ ζητεῖν τίς ἢ ἐκάστου ψυχῇ, οἷον τίς φυτοῦ  
 καὶ τίς ἀνθρώπου καὶ τίς θηρίου. διὰ τίνα δ' αἰτίαν τῷ 20  
 ἐφεξῆς οὕτως ἔχουσι, σκεπτέον. ἄνευ μὲν γὰρ τοῦ θρεπτικοῦ οὐ-  
 θέν ἐστὶν αἰσθητικόν· τοῦ δ' αἰσθητικοῦ χωρίζεται τὸ θρεπτι-  
 κόν, οἷον ἐν τοῖς φυτοῖς. πάλιν δ' ἄνευ τοῦ ἀπτικοῦ οὐδεμία  
 τῶν ἄλλων αἰσθήσεων, ἀφῇ δ' ἄνευ τῶν ἄλλων ὑπάρχει·  
 πολλὰ γὰρ ἐστὶ τῶν ζώων, ἃ οὐτ' ὄψιν ἔχει οὐτ' ἀκοήν. καὶ 25  
 τῶν αἰσθητικῶν δὲ κίνησις τοῖς μὲν ὑπάρχει τοῖς δ' οὐχ  
 ὑπάρχει· τελευταῖον δὲ διάνοια καὶ λογισμός· οἷς μὲν γὰρ  
 ὑπάρχει λογισμός, καὶ τῶν ἄλλων ἕκαστον τῶν εἰρημένων,  
 οἷς δ' ἐκείνων ἕκαστον, οὐ πᾶσιν ὑπάρχει λογισμός. ἀλλὰ τὰ  
 μὲν οὐδὲ φαντασίαν ἔχει μόνον. ὅτι μὲν οὖν ὁ περὶ τούτων 30  
 ἐκάστου λόγος οἰκειότατος περὶ ψυχῆς ἐστί, δηλον.

IV. Ἀνάγκη δὲ τὸν περὶ τούτων μέλλοντα πραγματεύεσθαι  
 λαβεῖν τί ἕκαστον αὐτῶν ἐστίν, εἰθ' οὕτω περὶ τῶν ἐχο-  
 μένων καὶ τῶν ἄλλων ποιεῖσθαι τὴν ἐπίσκεψιν. εἰ δὲ δεῖ  
 λέγειν τί ἕκαστον, οἷον τί τὸ νοητικὸν ἢ τί τὸ αἰσθητικὸν ἢ 35  
 θρεπτικόν, πρότερον λεκτέον τί τὸ νοεῖν καὶ τί τὸ αἰσθάνεσθαι·  
 αἱ γὰρ πράξεις καὶ αἱ ἐνέργειαι πρότεραι κατὰ τὸν λόγον  
 εἰσὶ τῶν δυνάμεων. ἀλλὰ μὴν εἴ γε ταῦτα πρότερον ἔτι  
 τούτων διοριστέον τὰ ἀντικείμενα, οἷον περὶ τροφῆς καὶ αἰ-  
 σθητοῦ καὶ νοητοῦ διὰ τὴν αὐτὴν αἰτίαν. ὥστε πρῶτον 40  
 περὶ τροφῆς καὶ γεννήσεως λεκτέον· αὕτη γὰρ ἡ ψυχὴ καὶ  
 τοῖς ἄλλοις ὑπάρχει, πρώτη δὲ καὶ κοινοτάτη ψυχῆς ἐστὶ δύ-  
 ναμις, καθ' ἣν ὑπάρχει τὸ ζῆν πᾶσιν. ἥς ἔργον ἐστὶ γέννη-  
 σις καὶ τὸ χρῆσθαι τροφῇ· τοῦτο γὰρ ἔργον μάλιστα φυσικὸν  
 πᾶσι τοῖς ζώσι, ὅσα μὴ ἀτελῇ ἢ πηρώματά ἐστιν, ἢ αὐτό- 45  
 ματον ἔχει τὴν γένεσιν, τὸ ποιῆσαι οἷον αὐτὸ ἕτερον, ζῆον

μὲν ζῶα, φυτὸν δὲ φυτά, ἵνα τοῦ ἀεὶ καὶ τοῦ θείου μετέχῃ ἕκα-  
 στον ὃν δύναται τρόπον· πάντα γὰρ ἐκείνου ὀρέγεται, καὶ κείνου  
 ἕνεκα πράττει ὅσα πράττει κατὰ φύσιν. τὸ γὰρ οὐ ἕνεκα διττόν,  
 τὸ μὲν οὐ, τὸ δὲ ᾧ· ἐπεὶ οὖν οὐ τῇ συνεχείᾳ τοῦ ἀεὶ καὶ τοῦ 50  
 θείου δύναται κοινωνεῖν· οὐ γὰρ ἐνδέχεται τὸ αὐτὸ ἀεὶ ἀριθμῶ  
 εἶναι οὐθὲν τῶν φθαρτῶν· ὃν τρόπον ἐπιβάλλει, τοῦτον ἕκαστον  
 θιγγάνει, τὸ μὲν μᾶλλον, τὸ δὲ ἥττον· καὶ διαμένει οὐκ αὐτό,  
 ἀλλ' οἶον αὐτό, ἀριθμῶ μὲν οὐχ ἓν, εἶδει δ' ἓν. ἔστι δ' ἡ  
 ψυχὴ ἀρχὴ τοῦ ζῶντος σώματος, ἀλλ' ἡ ἀρχὴ καὶ τὸ αἷτιον 55  
 λέγεται πολλαχῶς. ὁμοίως δ' ἡ ψυχὴ τοὺς τρεῖς τρόπους αἰτία  
 τοὺς διωρισμένους· καὶ γὰρ ὅθεν ἡ κίνησις καὶ οὐ ἕνεκα  
 καὶ ὡς οὐσία τῶν ἐμψύχων σωμάτων ἐστὶν ἡ ψυχὴ. ὅτι μὲν  
 οὖν ὡς οὐσία δῆλον· τοῦ γὰρ εἶναι ἡ οὐσία αἷτιον πᾶσι,  
 τὸ δὲ ζῆν τοῖς ζῶσι τὸ εἶναί ἐστιν, αἷτιον δὲ καὶ ἀρχὴ ἡ 60  
 ψυχὴ τούτου ἐστίν. φανερόν δὲ καὶ ὡς τὸ οὐ ἕνεκα ἡ ψυχὴ·  
 καὶ γὰρ ἡ φύσις ἕνεκά του ποιεῖ ὥσπερ ὁ νοῦς, καὶ τοῦτ'  
 ἐστὶν αὐτῆς τὸ τέλος. καὶ ἡ ψυχὴ τοιοῦτον ἐν τοῖς κατὰ  
 φύσιν, καὶ πᾶν τὸ σῶμα ὄργανον τῇ ψυχῇ· ὥσπερ δὲ τὸ  
 τῶν ζώων, καὶ τὸ τῶν φυτῶν. ἀλλὰ μὴν καὶ ὅθεν ἡ κίνησις 65  
 πρῶτον ἡ κατὰ τόπον, τοῦτό ἐστι ψυχὴ· ἀλλ' οὐ πᾶσι τοῖς  
 ζώοις ἡ τοιαύτη ὑπάρχει δύναμις. ἔτι δ' ἀλλοιώσις καὶ αὔξη-  
 σις κατὰ ψυχὴν· ἡ μὲν γὰρ αἰσθησις δοκεῖ τις ἀλλοιώσις  
 εἶναι, μὴ ἔχον δὲ ψυχὴν οὐθὲν ἂν αἰσθοίτο. ὁμοίως δὲ καὶ  
 περὶ αὔξησεως καὶ φθίσεως ἔχει· οὐθὲν γὰρ αὐξάνεται οὐδὲ 70  
 φθίνει φυσικῶς μὴ τρεφόμενον, οὐδὲ τρέφεται μὴ ζωῆς με-  
 τέχον. ἀλλὰ τοῦτο Ἐμπεδοκλῆς οὐκ εἴρηκεν ὀρθῶς, προστιθεὶς  
 τὴν αὔξησιν συμβαίνειν τοῖς φυτοῖς κάτω μὲν διὰ τὸ τὴν  
 γῆν φύσει οὕτω φέρεσθαι, ἄνω δὲ διὰ τὸ πῦρ. οὔτε γὰρ  
 τὸ κάτω καὶ ἄνω λαμβάνει ὀρθῶς· οὐ γὰρ τὸ αὐτὸ ἐκάστου 75  
 τὸ ἄνω καὶ τὸ κάτω καὶ τοῦ παντός· ἀλλ' ὡς ἡ κεφαλὴ τῶν  
 ζώων, οὕτως ἡ ῥίζα τῶν φυτῶν ἐστίν· τὸ δὲ αὐτὸ δεῖ λέγειν  
 ὄργανον, ὧν ἂν ἡ τὸ αὐτὸ ἔργον. ἔτι δὲ τί τὸ συνέχον εἰς  
 τὰναντία φερομένων; τοῦτο γὰρ αἷτιον τὸ τῆς αὔξησεως καὶ  
 τροφῆς· εἰ δὲ μὴ, οὐθὲν κωλύσει δι — —.

80

50. οὖν et οὐνη incerta Torst., γοῦν οὐκέτι (? semideletum) Bus. || 56. ὅμως E ||  
 61. Cf. ad 415b, 14 || 65. ἡ ante κίνησις om. E.

## III.

lib. II, 421a, 5—422a, 23.

E. fol. II, r°.

ὅτι οὐδέχονται τὸν αέρα οὐδ' ἀναπνέουσιν· δι' ἣν δ' αἰτίαν ἕτερος ἔσται περὶ αὐτῶν λόγος. Περὶ δὲ ὁσμῆς καὶ τοῦ ὁσφραντοῦ οὐκ ἔστι ῥάδιον διορίσαι ὁμοίως τοῖς εἰρημέ-  
νοις αἰσθητοῖς, τί ἐστὶν ἡ ὁσμὴ οὕτως ὥς ὁ ψόφος καὶ τὸ φῶς, αἷτιον δ' ὅτι οὐκ ἔχομεν ἀκριβῆ ταύτην τὴν αἰσθησιν, ἀλλὰ 5  
χείριστα ὁσμᾶται ἄνθρωπος τῶν ζώων, καὶ οὐδεμίαν ἄνευ τοῦ λυπηροῦ καὶ ἡδέος δύναται αἰσθῆσθαι ὁσμὴν, ὥς τοῦ αἰσθητηρίου ὄντος οὐκ ἀκριβοῦς. ὥσπερ οὖν τοῖς σκληροφθάλμοις ἀδήλους εἰκὸς εἶναι τὰς διαφορὰς τῶν χρωμάτων καὶ συγκεχυμένας, ἀλλὰ τῷ φοβερῷ καὶ τῷ ἀφόβῳ διορίζειν μόνον, 10  
οὕτω καὶ τὰ περὶ τὰς ὁσμάς τοῖς ἀνθρώποις, ἐπεὶ ἔοικέ τε ἀνάλογον ἔχειν πρὸς γεῦσιν καὶ ὅμοια τὰ εἶδη τῶν χυμῶν τοῖς τῆς ὁσμῆς, ἀλλὰ τὴν γεῦσιν ἔχομεν ἀκριβεστέραν διὰ τὸ εἶναι ἀφήν τινα αὐτήν· ταύτην δ' ἔχει τὴν αἰσθησιν ἀκριβεστάτην ἄνθρωπος· ἐν μὲν γὰρ ταῖς ἄλλαις 15  
λείπεται πολλῶν ζώων, τῶν δ' ἀπτῶν αἰσθάνεται μάλιστα ἀκριβῶς. διὸ καὶ φρονιμώτατον τῶν ζώων ἔστιν. σημεῖον δέ· καὶ γὰρ αὐτῶν τῶν ἀνθρώπων εὐφυεῖς, οἱ δ' ἀφυεῖς εἰσὶ παρ' οὐδὲν αἰσθητήριον ἕτερον ἀλλὰ παρὰ τοῦτο. ὦν μὲν γὰρ ἡ σὰρξ μαλακὴ, εὐφυεῖς, οἱ δὲ σκληρόσαρκοι ἀφυεῖς 20  
τὴν διάνοιαν. ἔστι δ' ὥσπερ χυμὸς ὁ μὲν γλυκὺς ὁ δὲ πικρὸς, καὶ ὁσμαι τὸν αὐτὸν ἔχουσιν τρόπον. ἀλλὰ τὰ μὲν ἔχει τὴν ἀνάλογον ὁσμὴν καὶ χυμόν, τὰ δὲ τοῦναντίον. ὁμοίως δὲ καὶ δριμεία καὶ αὐστηρὰ καὶ ὀξεῖα καὶ λιπαρά ἐστὶν ὁσμῇ. ἀλλ' ὥσπερ εἴρηται διὰ τὸ μὴ σφόδρα διαδήλους εἶναι 25  
τὰς ὁσμάς ὥσπερ τοὺς χυμούς, ἀπὸ τούτων εἴληφε τὰ ὀνόματα καθ' ὁμοιότητα τῶν πραγμάτων· ἡ μὲν γλυκεῖα κρόκου καὶ μέλιτος, ἡ δὲ δριμεία θύμου καὶ τῶν τοιούτων· τὸν αὐτὸν δὲ τρόπον καὶ ἐπὶ τῶν ἄλλων. ἔστι δ' ὥσπερ καὶ ἡ ἀκοὴ καὶ ἐκάστη τῶν αἰσθήσεων τοῦ τε ἀκουστοῦ 30  
καὶ ἀνηκούστου καὶ ὁρατοῦ καὶ ἀοράτου, καὶ ἡ ὁσφρησις τοῦ ὁσφραντοῦ καὶ ἀνοσφράντου. ἀνοσφραντον δὲ τὸ μὲν

III. 14. ταύτην om. E. || 19. τοῦτο] ταύτην E || 20. ἡ σὰρξ E (Bus.), ἡ om. E (Torst.) || 26. ἀπό τε E || 27. καὶ ὁμοιότητα E.

παρὰ τὸ ὅλως ἀδύνατον ἔχειν ὁσμήν, τὸ δὲ μικρὰν ἔχον  
 καὶ τὸ φαύλην, ὥσπερ τὸ ἄγευστον ὡσαύτως λέγεται. ἔστι δὲ  
 καὶ ἡ ὁσφρησις διὰ τοῦ μεταξύ, οἷον ὕδατος καὶ ἀέρος· καὶ 35  
 γὰρ τὰ ἐνυδρα φαίνεται αἰσθανόμενα ὁσμῆς, καὶ τὰ ἔναιμα  
 καὶ ἄναιμα ὁμοίως, ὥσπερ καὶ τὰ ἐν τῷ ἀέρι· καὶ γὰρ  
 τούτων ἓνια πόρρωθεν ἀπαντᾷ πρὸς τὴν τροφήν αἰσθανό-  
 μενα τὴν ὁσμήν· διὸ καὶ ἔχει ἀπορίαν εἰ πάντα μὲν ὡσαύτως  
 ὁσμᾶται, ὃ δ' ἄνθρωπος ἀναπνέων μὲν, μὴ ἀναπνέων δὲ 40  
 ἀλλ' ἢ κατέχων τὸ πνεῦμα ἢ ἐκπνέων οὐκ ὁσμᾶται, οὔτε  
 πόρρω οὔτ' ἐγγύς, οὔδ' ἂν ἐπιθῇ τις εἰς τὸν μυκτῆρα ἐντός.  
 καὶ τὸ μὲν ἐπ' αὐτῷ τῷ αἰσθητηρίῳ τιθέμενον ἀναίσθητον  
 εἶναι κοινὸν πάντων· ἀλλὰ τὸ ἄνευ τοῦ ἀναπνεῖν μὴ αἰσθά-  
 νεσθαι ἴδιον ἐπὶ τῶν ἀνθρώπων ἐστίν· τοῦτο δὲ πειρωμένῳ 45  
 δῆλον. εἰ οὖν τὰ ἄναιμα μὴ ἀναπνεῖ, ἑτέραν ἂν τινα ἔχοι  
 αἴσθησιν παρὰ τὰς λεγομένας. ἀλλ' εἴπερ τῆς ὁσμῆς αἰσθά-  
 νεται ἀδύνατον· ἡ γὰρ τοῦ ὁσφραντοῦ καὶ εὐώδους καὶ δυσώ-  
 δους αἴσθησις ὁσφρησίς ἐστιν. φαίνεται δὲ καὶ φθειρόμενα  
 ὑπὸ τῶν ἰσχυρῶν ὁσμῶν ὑφ' ὧν περ καὶ ἄνθρωπος, οἷον ἀσφάλ- 50  
 του καὶ θείου καὶ τῶν τοιούτων. ὁσφραίνεσθαι μέντοι νῦν ἀναγ-  
 καῖον, ἀλλ' οὐκ ἀναπνεῖν. ἀλλ' ἔοικε διαφέρειν τὸ αἰσθητή-  
 ριον τοῦτο τοῖς ἀνθρώποις πρὸς τὸ τῶν ἄλλων ζώων, ὥσπερ  
 καὶ τὰ ὄμματα πρὸς τὰ τῶν σκληροφθάλμων· τὰ μὲν γὰρ  
 ἔχει πῶμα καὶ ὥσπερ ἔλντρον τὰς βλεφαρίδας, ἃς ἂν μὴ 55  
 ἀνασπάσῃ καὶ κινήσῃ, οὐχ ὁρᾷ· τὰ δὲ σκληρόφθαλμα οὐκ  
 ἔχει, ἀλλ' εὐθὺς ὁρᾷ, ὅτι ἂν τεθῇ ἐν τῷ διαφανεῖ· οὕτω  
 καὶ τὸ ὁσφραντικὸν αἰσθητήριον τοῖς μὲν ἀκάλυφον εἶναι,  
 ὥσπερ τὸ ὄμμα, τοῖς δὲ δεχομένοις τὸν ἀέρα ἔχειν ἐπικάλυμμα,  
 ὃ ἀναπνεόντων ἀποκαλύπτεσθαι, διευρυνομένων τῶν φλεβῶν 60  
 καὶ τῶν πόρων. καὶ διὰ τοῦτο τὰ ἀναπνέοντα ἐν τῷ ὑγρῷ  
 οὐκ ὁσμᾶται, ὅτι ἀνάγκη ἀναπνεύσαντα ὁσφρανθῆναι, ἐν δὲ  
 τῷ ὑγρῷ ἀδύνατον τοῦτο ποιεῖν. ἔστι δ' ἡ ὁσμή τοῦ ξηροῦ  
 ὥσπερ ὁ χυμὸς τοῦ ὑγροῦ· τὸ δ' ὁσφραντικὸν αἰσθητήριον  
 δυνάμει τοιοῦτον.

65

Τὸ δὲ γευστόν ἐστιν ἄπτόν τι καὶ τοῦτο αἷτιον τοῦ  
 μὴ εἶναι αἰσθητὸν διὰ τοῦ μεταξὺ ἀλλοτρίου ὄντος σώμα-  
 τος· οὐδὲ γὰρ ἡ ἀφή. καὶ τὸ σῶμα, ἐν ᾧ ὁ χυμὸς, τὸ γε-

στόν, ἐν ὑγρῷ ὡς ὕλη· τοῦτο δ' ἀπτόν τι. διὸ καὶ ἐν ὕδατι εἴημεν, αἰσθανόμεθα ἐμβληθέντος γλυκέος, οὐ διὰ τοῦ μεταξὺ δὲ ἡμῶν ἢ αἰσθησις, ἀλλὰ τῷ μειχθῆναι τῷ ὑγρῷ, ὥσπερ ποτῷ· τὸ δὲ χρῶμα οὐχ οὕτως ὁράται τῷ μέγνυσθαι οὐδὲ ταῖς ἀπορροαῖς. ὥς μὲν οὖν τὸ μεταξὺ οὐθέν ἐστιν· ὥς δὲ χρῶμα τὸ ὁρατόν, οὕτω γευστόν χυμός. οὐθὲν δὲ ποιεῖ αἰσθησιν χυμοῦ ἄνευ ὑγρότητας, ἀλλ' ἔχει ἐνεργεία ἢ δυνάμει ὑγρό- 75 τητα, οἷον τὸ ἀλμυρόν· τηκτόν τε γὰρ αὐτὸ καὶ συντηκτικὸν τῆς γλώττης. ὥσπερ δὲ καὶ ἡ ὄψις ἐστὶ τοῦ τε ὁρατοῦ καὶ τοῦ ἀοράτου (ὁ γὰρ σκότος ἀόρατος, κρίνει δὲ καὶ τοῦτον ἡ ὄψις), ἔτι τοῦ λίαν λαμπροῦ (καὶ γὰρ τοῦτό πως ἀόρατον, ἄλλον τρόπον καὶ ὁ σκότος), ὁμοίως δὲ καὶ ἡ ἀκοὴ ψόφου 80 τε καὶ σιγῆς, ὧν τὸ

## IV.

lib. II, 423b, 8—424b, 18.

E. fol. 196 r<sup>o</sup>.

εἴρηται πρότερον ὅτι καὶ δι' ὑμένοσ ἀν πάντων αἰσθανόμεθα τῶν ἀπτῶν, καὶ ἐν λαυθάνοι διείργων, ὁμοίως ἀν ἔχοιμεν ὥσπερ νῦν ἐν τῷ ὕδατι καὶ ἐν τῷ ἀέρι· δοκοῦμεν γὰρ αὐτῶν θιγγάνειν καὶ οὐθὲν εἶναι διὰ μέσου. ἀλλὰ διαφέρει τούτῳ τὰ ἀπτά τῶν ὁρατῶν καὶ ψοφητικῶν, ὅτι ἐκείνων αἰσθανόμεθα 5 τῷ τὸ μεταξὺ ποιεῖν τι ἡμᾶς, τῶν δ' ἀπτῶν οὐχ ὑπὸ τοῦ μεταξὺ ἀλλ' ἅμα τῷ μεταξύ, ὥσπερ οἱ διὰ τῆς ἀσπίδος πληγέντες· οὐδὲ γὰρ ἡ ἀσπίς πληγείσα ἐπάταξεν, ἀλλ' ἅμα ἀμφοῖν συνέβη πληγῆναι. ὅλως δ' ἔοικε καὶ ἡ σὰρξ καὶ ἡ γλῶττα, ὥς ὁ ἀῆρ καὶ τὸ ὕδωρ πρὸς τὴν ὄψιν καὶ τὴν ἀκοὴν καὶ 10 ὁ σφρησις ἔχουσιν, οὕτως ἔχειν πρὸς τὸ αἰσθητήριον ὥσπερ ἐκείνων ἕκαστον. αὐτοῦ δὲ τοῦ αἰσθητηρίου ἀπτομένου οὐτ' ἐκεῖ οὐτ' ἐνταῦθα γένοιτ' ἀν αἰσθησις. οἷον εἴ τις τὸ σῶμα τὸ λευκὸν ἐπὶ τοῦ ὀφθαλμοῦ θείη τὸ ἔσχατον. ἢ καὶ δῆλον ὅτι ἐντὸς τὸ τοῦ ἀπτοῦ αἰσθητικόν. οὕτω γὰρ ἀν συμβαί- 15 νοι ὅπερ ἐπὶ τῶν ἄλλων· ἐπιτιθεμένου γὰρ ἐπὶ τὸ αἰσθητήριον οὐκ αἰσθάνεται, ἐπὶ δὲ τὴν σάρκα ἐπιτιθεμένου αἰσθάνεται· ὥστε μεταξύ ἄρα τοῦ ἀπτικοῦ ἢ σάρξ. ἀπταὶ μὲν οὖν εἰσὶν αἱ διαφοραὶ τοῦ σώματος ἢ σῶμα· λέγω δὲ διαφοράς,

αἱ τὰ στοιχεῖα διορίζουσι, θερμὸν καὶ ψυχρὸν καὶ ξηρὸν καὶ 20  
 ὑγρὸν, περὶ ὧν εἴρηται πρότερον ἐν τοῖς περὶ τῶν στοιχείων. τὸ δὲ  
 αἰσθητήριον αὐτῶν τὸ ἄπτικόν, καὶ ἐν ᾧ ἡ καλουμένη ἀφή ὑπάρ-  
 χει πρώτῳ, τὸ δυνάμει τοιοῦτόν ἐστι μόριον· τὸ γὰρ αἰσθά-  
 νεσθαι πάσχειν τί ἐστίν· ὥστε τὸ ποιοῦν οἶον αὐτὸ ἐνεργεῖα,  
 τοιοῦτον ποιεῖ ἐκεῖνο τὸ δυνάμει ὄν. διὸ τοῦ ὁμοίως θερμοῦ 25  
 ἢ ψυχροῦ ἢ σκληροῦ ἢ μαλακοῦ οὐκ αἰσθανόμεθα, ἀλλὰ  
 τῶν ὑπερβολῶν, ὡς ἂν τῆς αἰσθήσεως οἶον μεσότητός τινος  
 οὔσης τῆς ἐν τοῖς αἰσθητοῖς ἐναντιώσεως. καὶ διὰ τοῦτο κρί-  
 νει τὰ αἰσθητά. τὸ γὰρ μέσον κριτικόν· γίνεται γὰρ πρὸς  
 ὅποτερον οὖν αὐτῶν θάτερον τῶν ἄκρων· καὶ δεῖ ὥσπερ τὸ 30  
 μέλλον λευκοῦ αἰσθάνεσθαι ἢ μέλανος μηδέτερον εἶναι ἐνε-  
 ργεῖα, ἀλλὰ δυνάμει, οὕτω δὴ καὶ ἐπὶ τῶν ἄλλων καὶ ἐπὶ τῆς  
 ἀφῆς μήτε θερμὸν μήτε ψυχρὸν. ἔτι δ' ὥσπερ τοῦ τε ὁρατοῦ καὶ  
 τοῦ ἀοράτου ἦν πως ἡ ὄψις, ὁμοίως δὲ καὶ αἱ ἄλλαι τῶν ἀντι-  
 κειμένων, οὕτω καὶ ἡ ἀφή τοῦ ἄπτου καὶ ἀνάπτου· ἀναπτον 35  
 δὲ τό τε μικρὰν πάμπαν ἔχον διαφορὰν τῶν ἄπτῶν, οἶον  
 πέπονθεν ὁ ἀήρ, καὶ αἱ ὑπερβολαὶ τῶν ἄπτῶν, ὥσπερ τὰ  
 φθαρτικά. καθ' ἑκάστην μὲν οὖν αἰσθησιν εἴρηται ὡς ἐν  
 τύπῳ εἰπεῖν.

Καθόλου δὲ περὶ πάσης αἰσθήσεως δεῖ λαβεῖν ὅτι ἡ 40  
 μὲν αἰσθησίς ἐστι τὸ δεκτικὸν τῶν αἰσθητῶν ἄνευ τῆς  
 ὕλης, οἶον ὁ κηρὸς τοῦ δακτυλίου ἄνευ τοῦ σιδήρου καὶ τοῦ  
 χρυσοῦ δέχεται τὸ σημεῖον, λαμβάνει δὲ τὸ χαλκοῦν ἢ χρυ-  
 σοῦν σημεῖον, ἀλλ' οὐχ ἢ χαλκὸς ἢ χρυσός. ὁμοίως δὲ  
 καὶ ἡ αἰσθησις ἐκάστη ὑπὸ τοῦ ἔχοντος χρῶμα ἢ ψόφον 45  
 ἢ χυμὸν πάσχει, ἀλλ' οὐχ ἢ ἑκαστον ἐκείνων λέγεται, ἀλλ'  
 ἢ τοιόνδε καὶ κατὰ τὸν λόγον. αἰσθητήριον δὲ πρῶτον, ἐν  
 ᾧ ἡ τοιαύτη δύναμις. ἔστι μὲν οὖν τὸ αὐτό, τὸ δ' εἶναι ἕτε-  
 ρον· μέγεθος μὲν γὰρ ἂν τι εἴη τὸ αἰσθανόμενον· οὐ μέντοι  
 τό γε αἰσθητικῶς εἶναι ἢ αἰσθήσει μεγέθει ἐστὶν εἶναι, ἀλλὰ λό- 50  
 γος τις καὶ δύναμις ἐκείνου. φανερόν δ' ἐκ τούτων καὶ διὰ  
 τί ποτε τῶν αἰσθητῶν αἱ ὑπερβολαὶ φθειροῦσι τὰς αἰσθή-  
 σεις· ἂν γὰρ ἢ ἡ κίνησις ἰσχυροτέρα τοῦ αἰσθητηρίου, λύε-  
 ται ὁ λόγος, τοῦτο δ' ἦν αἰσθησις, ὥσπερανεὶ ἢ συμφω-

20. αἰς E || 24. οἶον om. E. || 27. ὡς ἂν τοῦ αἰσθητηρίου τῆς αἰσθήσεως E || 29. κριτικόν·  
 γίνεται γὰρ πρὸς om. E || 32. δὴ δὲ E || 37. ἄπτῶν ἀναπτοι ὥσπερ E || 54. ἦν ἢ conl. Torst.



νία καὶ ὁ τόνος σφόδρα κρουομένων τῶν χορδῶν. καὶ διὰ 55  
 τί ποτε τὰ φυτὰ οὐκ αἰσθάνεται, ἔχοντά τι μόριον ψυχι-  
 κὸν καὶ πάσχοντα ὑπὸ τῶν ἀπτῶν· καὶ γὰρ ψύχεται καὶ  
 θερμαίνεται· αἴτιον δὲ τὸ μὴ ἔχειν μεσότητα, μηδὲ τοιαύ-  
 την ἀρχήν, οἶαν τὰ εἶδη τῶν αἰσθητῶν δέχεσθαι, ἀλλὰ  
 μετὰ τῆς ὕλης πάσχειν. ἀπορήσειε δ' ἂν τις, ἄρα πάθοι ἂν 60  
 ὑπ' ὁσμῆς τὸ μὴ δυνάμενον ὁσφρανθῆναι, ἢ ὑπὸ χρώματος τὸ  
 μὴ δυνάμενον ἰδεῖν· ὁμοίως δὲ καὶ ἐπὶ τῶν ἄλλων. εἰ δ' ἡ  
 ὁσμὴ τὸ ὁσφραντόν, εἴ τι ποιεῖ, τὴν ὁσφρησιν ποιεῖ ὁσμῇ.  
 ὥστε οὐθὲν πάσχειν τῶν ἀδυνάτων ὁσφρανθῆναι. ὁ δ' αὖ-  
 τὸς λόγος καὶ ἐπὶ τῶν ἄλλων· οὐδὲ τῶν δυνατῶν, ἀλλ' ἡ 65  
 αἰσθητικὸν ἕκαστον. ἅμα δὲ δῆλον καὶ οὕτως. οὔτε γὰρ  
 ψόφος οὔτε τὸ φῶς καὶ σκότος οὔτε ἡ ὁσμὴ οὐθὲν ποιεῖ τὰ  
 σώματα, ἀλλ' ἐν οἷς ἐστίν, οἷον ἀήρ ὁ μετὰ τῆς βροντῆς  
 διέστησε τὸ ξύλον. ἀλλὰ δὴ τὰ ἀπτά καὶ οἱ χυμοὶ ποιοῦσιν· εἰ  
 γὰρ μή, ὑπὸ τίνος ἂν πάσχοι τὰ ἄψυχα ἢ ἀλλοιοῖτο; ἄρ' 70  
 οὖν κάκεῖνα ποιεῖ; ἢ οὐ πᾶν σῶμα παθητικὸν ὑπ' ὁσμῆς  
 καὶ ψόφου· καὶ τὰ πάσχοντα ἀόριστα, καὶ οὐ μένει, οἷον  
 ἀήρ· ὅξει γὰρ ὡς παθὼν τι. τί οὖν ἐστὶ τὸ ὁσμᾶσθαι παρὰ  
 τὸ πάσχειν τι; ἢ τὸ μὲν ὁσμᾶσθαι καὶ αἰσθάνεσθαι, ὁ δ'  
 ἀήρ παθὼν τοῦτο ταχὺ αἰσθητὸς γίγνεται. 75

59. οἶον E || 61. ἡ om. E || 63. ἡ ὁσμὴ conl. Torst. || 71. ἡ om. E || 74. καὶ ai E.



## NOTES.

### BOOK I. CHAPTER I.

**402 a 1—22.** In this introductory chapter A. first touches upon the importance and utility, especially for physics, of an enquiry into the soul, and next enlarges upon the difficulties besetting such an enquiry. Its object is to determine the nature of the soul and its essential attributes [§ 1]. There is the general logical difficulty, viz., the absence of any uniform recognised method of obtaining definitions and the uncertainty as to the premisses from which the investigation should start [§ 2].

**402 a 1 τῶν...4 τιθείμεν.** Universam hanc periodum sic recte interpretis: Quarum rerum cognitio pulchra et honore digna est, earum etiam investigatio est pulchra et honore digna: quarum igitur illa magis est honore digna, earum et haec. At pulcherrima facile est animae cognitio: pulcherrima igitur etiam investigatio eius quid sit (Torstrik, p. 112). According to Philop. (24, 3 sqq., 17 sqq.) these apparently harmless propositions caused Alex. Aphr. so much perplexity that he condemned as spurious the whole passage α 1 μᾶλλον ...3 εἶναι and explained δι' ἀμφοτέρα ταῦτα ας διὰ τὸ καλὴν καὶ τιμίαν εἶναι. If the report is correct, Alexander's suspicions must have been aroused because he supposed the supremacy of metaphysics to be challenged and even the place claimed for psychology among the natural sciences to be inconsistent with such passages as, e.g., *Eth. Nic.* 1141 a 33—b 2. See note on 402 a 4 ἐν πρώτοις.

**a 1. τῶν καλῶν καὶ τιμίων τὴν εἰδῆσιν.** The partitive genitive becomes a predicate here after ὑπολαμβάνοντες. This is fairly common with εἶναι, e.g. *infra* 402 a 10 ἐστὶ τῶν χαλεπωτάτων, 417 a 24, 422 a 6. So also with γίνεσθαι, *Pol.* 1304 a 16 γενόμενος τῶν ἀρχόντων, as in other writers; with ποιεῖν, *Rhet.* II. 23 § 11, 1398 b 13 Λακεδαιμόνιοι Χίλωνα τῶν γερόντων ἐποίησαν; with τίθεναι, τίθεσθαι, γράφειν [Kühner-Gerth, *Gr. Gr.* § 418, p. 375]. After ὑπολαμβάνειν A. omits upon occasion the infinitive [here εἶναι], thus converting the verb into one of incomplete predication, and assimilating its construction to that of τίθεναι (405 b 18, 26), τίθεσθαι (405 a 15), ποιεῖν (404 b 10, 31, 405 b 13 sq., 19), καλεῖν (405 b 28 sq.) when similarly used. Thus, to confine ourselves to I., c. 2, the infinitive εἶναι after ὑπολαμβάνειν is found 403 b 31, 404 a 8, 22 sq. and omitted 404 b 8, 405 a 5, 20, b 7. The same freedom of construction is permitted with λέγειν, see 404 a 5, 21 compared with 26. For τιμίων cf. 430 a 18 sq., *De Part. An.* I. 5, 644 b 22—645 a 1, *Metaph.* 1074 b 21 (where it is an attribute of νοῦς), 26, 30 (where it is applied to the object of thought).

The rare word εἰδῆσις is apparently used by A. here only. It may be his own coinage, for, though occurring in Theophrastus (e.g. *frag.* LXXXIX. § 4), in scholiasts on Homer and Sophocles, and, as might be expected, in commentators like Philop., it seems to have found little favour. Later it was affected by Clement of Alexandria and Sextus Empiricus. Hesychius explains it by γνώσις, and like γνώσις, 402 a 5, it is a comprehensive, general term for knowledge of

any and every kind. Cf. *Ind. Ar.* 158 b 42 pro synonymis vel in eodem sententiae contextu vel in iisdem formulis γνωρίζειν, γινώσκειν, γνῶσιν λαμβάνειν, μανθάνειν, εἰδέναι, ἐπίστασθαι leguntur. In 402 b 16 sqq. γνῶναι, θεωρῆσαι, κατιδεῖν, εἰδέναι, γνωρίζειν are used in succession. Like other verbal nouns in -σις εἶδσις is strictly the act or process of knowing, as νόσις is thinking, ποίησις producing, ἀκουσις hearing, ὀρεξις longing, αὔξισις growing, σύνθεσις combining, though sometimes the strict sense is not maintained, ὄψις and αἴσθησις being notoriously ambiguous.

a 1, 2. μᾶλλον δ' ἐτέραν ἐτέρας. Supply τῶν καλῶν καὶ τιμίων. Cf. *Metaph.* 996 b 16 αὐτῶν δὲ τούτων ἕτερον ἐτέρον μᾶλλον [int. εἰδέναι φαμέν]. A. is fond of arranging kinds of knowledge in a scale of increasing dignity or intrinsic worth. Thus in *Metaph.* 980 a 27—981 a 12 and *Anal. Post.* II. 19, 99 b 34—100 a 9 we have such a scale of knowledge rising from sense-perception through memory and experience to art, and finally to science (ἐπιστήμη). The sciences themselves are variously classified. See *Anal. Post.* I. 13, 78 b 34—79 a 6. In *Metaph.* 1026 a 18—23 a scheme of three theoretical sciences is projected in outline,—First Philosophy (called θεολογική) is the highest, next comes Mathematics, next Physics, 1064 b 1—6. Cf. *Toph.* VIII. 1, 157 a 8 τὸ δὲ διαυρεῖσθαι τοιοῦτον οἶον ὅτι ἐπιστήμη ἐπιστήμης βελτίων ἢ τῷ ἀκριβεστέρα εἶναι ἢ τῷ βελτιόνων.

a 2. κατ' ἀκριβειαν. The meaning of the term varies according as it is applied to ἀπόδειξις or ἐπιστήμη. (1) The rigorous accuracy of a demonstration depends upon the correctness of the reasoning and the truth of the premisses. In sciences which deal with the contingent it often happens that premisses and therefore conclusions are only general, not universal, truths. The rigorous accuracy of mathematical proof is not to be looked for in ethics (*Eth. Nic.* 1094 b 11—27) because the premisses are contingent. Cf. 1104 a 1—6. In this sense all scientific reasoning and all theoretical science is exact, and to ἀκριβεστέρον δεικνύναι, *Metaph.* 1064 a 6 sq., is opposed μαλακώτερον δεικνύναι, to reason loosely or inconclusively. But (2) in another sense ἀκριβής is applied to a science or knowledge in respect not of the proof but of the method of treatment employed. It then means "abstract," like ἀπλοῦς, and it is implied that the objects with which such a science deals are themselves by comparison more abstract, more simple and logically prior; for ἀκριβεια is a relative term. Thus of First Philosophy, the highest of the sciences, and also the most abstract, A. says (*Metaph.* 982 a 25): "Those amongst the sciences are most exact which have especially to do with the first causes, for the sciences which start from fewer premisses are more exact than those which are complicated with additional determinations: Arithmetic, for example, is more exact than Geometry." On this Bonitz *ad loc.*, "ἀκριβειαν sive exactam et omnibus numeris perfectam cognitionem tum maxime possumus consequi, cum in simplicissimis versamur notionibus. Simplicissimae autem notiones eadem maxime sunt universales et summae et sua natura primae...Itaque ἀκριβειαν praecipuam qui tribuunt sapientiae [i.e. First Philosophy], eam referre debent ad prima et simplicissima rerum genera." *Ib.* 1078 a 9 καὶ ὅσῳ δὴ ἂν περὶ προτέρων τῷ λόγῳ καὶ ἀπλουστέρων [sc. ἐπιστήμη ἐστὶ], τοσοῦτῳ μᾶλλον ἔχει τὰκριβές· τοῦτο δὲ τὸ ἀπλοῦν ἐστίν. ὥστε ἄνευ τε μεγέθους μᾶλλον ἢ μετὰ μεγέθους, καὶ μάλιστα ἄνευ κινήσεως. ἐὰν δὲ κίνησιν, μάλιστα τὴν πρώτην· ἀπλουστάτη γάρ, καὶ ταύτης ἡ ὁμολή. ὁ δ' αὐτὸς λόγος καὶ περὶ ἀρμονικῆς καὶ ὀπτικῆς· οὐδετέρα γὰρ ἢ ὄψις ἢ ἡ φωνὴ θεωρεῖ, ἀλλ' ἢ γραμμαὶ καὶ ἀριθμοί· οἰκεία μὲν ταῦτα πάθῃ ἐκείνων. καὶ ἡ μηχανικὴ δὲ ὁσαύτως. First Philosophy considers its objects, *quia* existent, as possessing but one attribute, that which is

postulated in all the rest; Arithmetic regards its objects as numerable, but takes no account of extension; Geometry complicates its investigations by regarding its objects, ἐκ προσθέσεως, not only as numerable, but also as extended. All mathematical sciences are more abstract than the physical sciences, for the former treat their objects as unmoved, while physics takes account of motion. Optics does not deal with the physiological properties of vision, nor harmonics with those of voice: the former treats the ray of light as a line, the latter a chord as the ratio of two numbers: and so on. It often happens that the more abstract science discovers the cause which is necessary to explain the facts investigated by a more concrete science. *Anal. Post.* I. 27, 87 a 31 Ἀκριβεστέρα δ' ἐπιστήμη ἐπιστήμης καὶ προτέρα (1) ἢ τε τοῦ ὅτι καὶ διότι ἡ αὐτή, ἀλλὰ μὴ χωρὶς τοῦ ὅτι τῆς τοῦ διότι, καὶ (2) ἢ μὴ καθ' ὑποκειμένου τῆς καθ' ὑποκειμένου, οἷον ἀριθμητικὴ ἀρμονικῆς, καὶ (3) ἢ ἐξ ἐλαττόνων τῆς ἐκ προσθέσεως, οἷον γεωμετρίας ἀριθμητικῆς. λέγω δ' ἐκ προσθέσεως, οἷον μονὰς οὐσία ἄθετος, στιγμὴ δὲ οὐσία θετός· ταύτην ἐκ προσθέσεως. Of these three conditions it is easy to see that the last is the most fundamental and that the others rest upon it. Trendelenburg's translation "quod vel acrius ingenii acumen requirit" has no sort of justification, and the discrepancy which he discovers between these words and a 10 is imaginary. First philosophy is at once the most abstract and the most difficult of the sciences (*Metaph.* 982 a 24 sq.), and psychology presents more difficulties than the other biological sciences precisely because it is more abstract than the rest. Its ἀκρίβεια is relative. In *Anal. Post.* II. 19, 99 b 33 A. speaks hypothetically of a (δύναμις) τούτων τιμωτέρα κατ' ἀκρίβειαν, and *ib.* 99 b 27 of ἀκριβεστέρας γνώσεις ἀποδείξεως. Of course as a matter of fact (100 b 8) οὐδὲν ἐπιστήμης ἀκριβεστέρον. Plato, *Philebus* 59 D, uses of νοῦς and φρόνησις the words αἱ γ' ἂν τις τιμήσειε μάλιστα ὀνόματα and ἀπηκριβωμένα.

a 2 ἢ τῷ...3 εἶναι. The subject-matter (τὸ ἐπιστητὸν, the province or γένος with which the science deals) also helps to determine the place of a science in the scale, quite independently of the question whether the treatment is abstract or concrete. For this reason in the realm of Nature the sciences which deal with the πρῶτον στοιχεῖον, ἀφθαρτον, ἀγένητον, κύκλω φορητόν, rank higher than the rest: *De Cael.* III. 1, 298 b 6 sqq. Cf. *Metaph.* 1026 a 21 καὶ τὴν τιμωτάτην (sc. ἐπιστήμην) δεῖ περὶ τὸ τιμωτάτον γένος εἶναι. *ib.* 1064 b 5 βελτίων δὲ καὶ χείρων ἐκάστη λέγεται κατὰ τὸ οἰκεῖον ἐπιστητὸν. The genitive of relation expressing the object of a cognition, as of any other mental act, may be freely illustrated from the terminology of this treatise in reference to sensation and the sensible object. Cf., e.g., 418 a 13, 26, 421 b 4—6, 422 a 20—29, 422 b 23—25, 424 a 10—12, 426 b 8, 434 b 18.

a 3. δι' ἀμφοτέρα ταῦτα, "for both these reasons," i.e. for its exactitude (ἀκρίβεια) and for the importance of its subject-matter. In this treatise our subject is τὸ ψυυχον ζῶον ἢ ψυυχον, and we deal preeminently with the form (which is ἀκίνητον) not with the matter; and in proportion as we do this we regard the ψυυχον ζῶον not concretely as made up of σάρξ, ὁστούν, νεῦρον, and the like, but abstractly as living, moving, perceiving, thinking, these attributes being due to soul as cause. Cf. *notes inf.* on a 9.

a 4. ἱστορίαν loco nostro non esse eandem ac τὴν εἶδῃσιν, sed significare indagatorem et investigationem, ex universi prologi ratione intelligitur: omnia enim spectant ad viam ac rationem qua ad animae cognitionem perveniantur (Torst.). A. modestly styles the science which he is inaugurating a study: an enquiry concerning soul. As applied to his Natural History, ἱστορίαι περὶ ζῴων, the term denotes researches undertaken and materials collected to serve as the basis of a future science.

a 4. ἐν πρώτοις, relatively to other natural sciences. Cf. *De Cael.* III. 7, 306 a 27 sq., where mathematics are styled αἱ ἀκριβέσταται ἐπιστήμαι. The only conceivable ground on which absolutely first rank can be claimed for psychology is the doctrine of νοῦς χωριστός 430 a 17, but I cannot see that A. makes the claim.

a 5. πρὸς ἀλήθειαν ἄπασαν. How necessary it is for practical philosophy can be seen from *Eth. Nic.* I. 13. (Cf. *Them.* I, 20—2, 6 H., 2, 18—28 Sp.)

a 6. πρὸς τὴν φύσιν, to the study of nature, of which biology was and is a main department. The importance of soul as πηγὴ καὶ ἀρχὴ πάσης κινήσεως, ὥς μὲν καὶ πᾶσι τοῖς σώμασι, μάλιστα δὲ τοῖς τῶν ζώων καὶ τῶν φυτῶν (*Them.* I.c.), will be greatest to the science, viz. φυσικὴ, which treats its subject-matter so far as it is capable of motion [*Metaph.* 1026 a 12]. ἔστι γὰρ, sc. ἡ ψυχὴ. οἶον ἀρχή. More explicitly 413 b 11 ἐστὶν ἡ ψυχὴ τῶν εἰρημένων τούτων ἀρχὴ καὶ τούτοις ὄρισταί, θρεπτικῶ, αἰσθητικῶ, διανοητικῶ, κινήσει. For the proof see 415 b 8—416 a 18, where the various senses in which soul is τοῦ ζῶντος σώματος αἰτία καὶ ἀρχή are discriminated and we are plainly told that the bodies of animals and plants are instruments of the soul (415 b 18 sq.). Why οἶον? Confuse legentis (Zabarella): cf. 414 a 9 οἶον ἐνέργεια. The mode of expression should mislead no one: A. firmly holds that soul is ἀρχή, as that health I.c. is ἐνέργεια. It remains to be seen in what precise sense soul is ἀρχή. If we compare the expression τὰς ἐν ὕλης εἶδει αἰτίας applied to the ἀρχαί of the Ionian philosophers (*Metaph.* 984 a 17), we may perhaps see a characteristic reservation for which the vagueness of the prevailing views (cf. I., c. 2) is responsible.

a 7 ἐπιζητούμεν...τοῦ ὑπάρχεν. In this section A. maps out his enquiry. If there is a science of soul it must conform to the conditions laid down in *Anal. Post.* for all sciences and particularly for all physical sciences, as it is plainly a branch of physics. On the formal side the main work of the enquirer will be to delimit his province, to define it and to deduce the essential properties: *Anal. Post.* I. 7, 75 b 7 sq., *Metaph.* 1004 b 7 ἐκείνης τῆς ἐπιστήμης (ἐστὶ) καὶ τί ἐστὶ γνωρίσαι καὶ τὰ συμβεβηκότα αὐτοῖς.

a 7. θεωρῆσαι καὶ γνῶναι. Καὶ explicative="that is," γνῶναι being the more general term. As to θεωρεῖν see *Ind. Ar.* 328 a 40 apud animum contemplari. The precise and specialised meaning can be best gathered from *De A.* itself, esp. 417 a 21—b 26 and 432 a 8 sq.: in particular, to apply knowledge already acquired, ἐνεργεῖν κατὰ τὴν ἐπιστήμην 412 a 9—11, 25 sq., 417 a 28 sq., b 5 sq. Here, however, the verb is used more generally without any such implication, the two terms θ. and γ. being as nearly synonymous as in 402 b 17 except that even in this unrestricted sense θεωρεῖν is always an active operation, not a latent capacity. It is the act of apprehending by mental vision (and so σκοπεῖσθαι, ἐπισκοπεῖν are synonyms): e.g. *Phys.* III. 5, 204 b 4, 10 λογικῶς μὲν σκοποῦμένους...φυσικῶς δὲ θεωροῦσιν..., *Metaph.* 1003 a 21, 23, 1004 b 1 sq. Cf. *Anal. Post.* I. 18, 81 b 2 ἀδύνατον δὲ τὰ καθόλου θεωρῆσαι μὴ δι' ἐπαγωγῆς, ἐπεὶ καὶ τὰ ἐξ ἀφαιρέσεως λεγόμενα ἔσται δι' ἐπαγωγῆς γνῶριμα ποιεῖν.

a 8. καὶ τὴν οὐσίαν, "that is to say, its essence": καὶ again explicative. *Ind. Ar.* 545 b 23 pariter atque εἶδος vel λόγος cum οὐσία syn conjungitur φύσις, *Metaph.* 1014 b 36, 1070 a 9, 12, 1031 a 30, b 1, *De Part. An.* II. 1, 646 a 25 sq. *De Cael.* II. 4, 286 b 11 τῇ οὐσίᾳ καὶ τῇ φύσει, *Phys.* II. 1, 193 a 9 ἡ φύσις καὶ ἡ οὐσία, *Metaph.* 1053 b 9 κατὰ τὴν οὐσίαν καὶ τὴν φύσιν, *ib.* 1019 a 2 κατὰ φύσιν καὶ οὐσίαν, 1064 b 11. Our first task is to discover τί ἐστὶν ἡ ψυχὴ. We must obtain a definition which will express its "essential nature." This last expression, retained in modern writings, attests how completely φύσις and οὐσία in the sense here intended are synonymous.

a 8. εἶθ' = next in order. Z. contrasting 415 a 14—16 remarks: hic loquitur de ordine doctrinae, ibi de via, non de ordine. Z. further maintains that this programme is so far carried out that the whole of *De A.* treats properly of the *τί ἐστι*, the nature of soul, its *συμβεβηκότα* or accidents being reserved for the *Parva Naturalia*, appealing to *De Sensu* 436 a 1—5. But Z. is obliged to admit that in III. cc. 4—8 the treatment of intellect is exhaustive, including properties as well as essential nature. There is no need to lay such stress on this formal division of the task before us. Every science must delimit its *γένος*, and define its subject, before it can proceed to deduce the essential properties: *Metaph.* 1003 a 21—26, b 19—22, 1004 b 5—8, 10—17, 1025 b 3 sqq., esp. b 5—13 and 1063 b 36—1064 a 7, which is a convenient summary of *Metaph.* E. 1.

a 8. ὅσα συμβέβηκε, i.e. all essential attributes, often styled τὰ καθ' αὐτὰ συμβεβηκότα and (*Anal. Post.* and *Metaph.*) τὰ καθ' αὐτὰ ὑπάρχοντα, also (402 a 15) τὰ κατὰ συμβεβηκὸς ἴδια (= properties). The usual example is the property of a triangle that its angles are equal to two right angles (402 b 20). This forms no part of the definition, but can be deduced from it. *Ind. Ar.* 713 b 43 inde συμβαίνειν, συμβεβηκέναι, συμβεβηκός id dicitur, quod cum non insit ipsi alicuius rei notioni, tamen concludendo ex ea necessario colligitur. It is not enough that a science should delimit its province and obtain a definition. From this definition it must deduce all the essential properties of the subject under investigation. We shall presently see (402 b 16—403 a 2) that essence and properties are mutually implicated, and that in some cases the study of the property is the best road to the determination of the essence. In this treatise there are various designations and enumerations of the attributes of soul (or, more correctly, of the animate being which possesses the soul *quā* animate), e.g. ἔργα καὶ πάθη (409 b 15, cf. 407 b 18), ἐνέργειαι καὶ πράξεις (415 a 19), παθήματα (403 a 11, cf. 403 a 5—7, 16—18, 411 a 26—b 5). Cf. *De Sensu* I, 436 a 1—18. They are seldom styled *συμβεβηκότα*. See, however, 409 b 14. In general terms, whatever the possessor of soul does or suffers in virtue of such possession, 411 b 2 sq. ποιούμεν τε καὶ πάσχομεν (cf. 403 a 6 sq. πάσχειν οὐδὲ ποιεῖν), A. regards as a "function" or operation of soul.

In this well-established sense *συμβεβηκός* = *συμβ. καθ' αὐτό*. But the term is ambiguous, and is more commonly used by A. to denote something quite different, i.e. an accident, a purely fortuitous attribute, white and musical in man being the stock instances (*Ind. Ar.* 714 a 20). As *συμβεβηκότα* in this latter sense are never necessary, are neither universal nor even general attributes, they do not fall under demonstrative science. *Metaph.* 1025 a 14 *συμβεβηκὸς λέγεται ὁ ὑπάρχει μὲν τινι καὶ ἀληθὲς εἰπεῖν, οὐ μέντοι οὐτ' ἐξ ἀνάγκης οὐτ' ἐπὶ τὸ πολὺ, οἷον εἰ τις ὀρίτταν φυτῷ βόθρον εἶρε θησαυρόν*: 1026 b 27—37. Compare for the two meanings *Phys.* I. 3, 186 b 17 εἰ γὰρ μὴ ὕπερ ὅν τι, *συμβεβηκότα ἔσται. ἢ οὖν τῷ ἀνθρώπῳ ἢ ἄλλῳ τινὶ ὑποκειμένῳ...συμβεβηκός τε γὰρ λέγεται τοῦτο, ἢ δ' ἐνδέχεται ὑπάρχειν καὶ μὴ ὑπάρχειν* [accident proper, non-essential attribute], ἢ οὐ ἐν τῷ λόγῳ ἐνυπάρχει τὸ ὃ συμβέβηκεν, ἢ ἐν ᾧ ὁ λόγος ὑπάρχει ὃ συμβέβηκεν, οἷον τὸ μὲν καθῆσθαι ὡς χωριζόμενον, ἐν δὲ τῷ σιμῷ ὑπάρχει ὁ λόγος ὁ τῆς βιῆδος ἢ φαμέν *συμβεβηκέναι* τὸ σιμόν. *Anal. Post.* I. 22, 83 b 17—24 ὑπόκειται δὲ ἐν καθ' ἑνὸς κατηγορεῖσθαι, αὐτὰ δὲ αὐτῶν, ὅσα μὴ τί ἐστι, μὴ κατηγορεῖσθαι. *συμβεβηκότα* γάρ ἐστι πάντα, ἀλλὰ τὰ μὲν καθ' αὐτά, τὰ δὲ καθ' ἕτερον τρόπον· ταῦτα δὲ πάντα καθ' ὑποκειμένου τινὸς κατηγορεῖσθαι φαμεν, τὸ δὲ *συμβεβηκός* οὐκ εἶναι ὑποκειμένον τι. οὐδὲν γὰρ τῶν τοιούτων τίθεμεν εἶναι, δ' οὐχ ἕτερόν τι ὅν λέγεται ὁ λέγεται, ἀλλ' αὐτὸ ἄλλοις, καὶ ἄλλ' ἄττα φαμέν [i.e. ἄλλ' αὐτὸ sc. τὸ *συμβεβηκός*, ἄλλοις sc. *συμβεβηκέναι* φαμέν καὶ ἄλλ' ἄττα καθ' ἕτερον sc. *κατηγορεῖσθαι*]. Cf. *Phys.* VIII. 5, 256 b 9 sq. οὐ γὰρ ἀναγκαῖον τὸ *συμβεβηκός*,

ἀλλ' ἐνδεχόμενον μὴ εἶναι. ἐὰν οὖν θῶμεν τὸ δυνατόν εἶναι, οὐδὲν ἀδύνατον συμβήσεται, ψεῦδος δ' ἴσως. περὶ αὐτήν, i.q. τὴν ψυχὴν. The usual construction with συμβαίνειν as with ὑπάρχειν is the dative, 402 b 18 ταῖς οὐσίαις. Properties belong to or go with the things of which they are predicated. For the variant with περὶ c. acc. cf. *Metaph.* 997 a 29 περὶ ἕκαστον γένος, 33 περὶ τὴν οὐσίαν, *De Part. An.* I. 5, 645 b 1 τὰ συμβεβηκότα περὶ ἕκαστον γένος, ὅσα καθ' αὐτὰ... ὑπάρχει τοῖς ζώοις.

a 9. ὦν τὰ μὲν...δοκεῖ. As a logical term πάθος, like συμβεβηκός and ὑπάρχον, denotes an attribute: *Metaph.* 1037 b 16 ὅταν ὑπάρχη [sc. θατέρω θάτερον] καὶ πάθη τι τὸ ὑποκείμενον: cf. 403 a 17, 25, 403 b 17 and notes. Regarded as attributes of a subject, ὑποκείμενον, the active operations, no less than the passive affections, of soul are ἴδια πάθη, as they are συμβεβηκότα καθ' αὐτά: and this applies to all the acts or operations enumerated 411 a 26 sqq. See also 417 a 14 sqq., b 12 sqq., 431 a 6 sq. On the surface the words before us imply that there are thought (δοκεῖ) to be properties of soul which are not properties of the animal to whom the soul belongs. What are they? ζῶον = ἐμψυχον σῶμα, and when the question arises below (403 a 3→10) A. inclines to the view that there are none such.

a 9. τὰ δὲ δι' ἐκείνην καὶ τοῖς ζώοις ὑπάρχειν. This is the normal type of attributes of soul, whether active operations or passive states. As expressed below, 403 a 3→10, the body as well as the soul shares in them, and therefore their definition ought to take account of the body (403 a 16→27), and psychology becomes a branch of physics (403 a 27→b 7); in other words this second class of attributes or "states" of soul are ἀχώριστα τῆς φυσικῆς ὅλης τῶν ζῶων (403 b 17). If so, the subject, ὑποκείμενον, to which they belong is properly the animal (ζῶον ἐμψυχον), and we are often reminded that such is really the fact, e.g. 408 b 13→15, 411 b 2 ποιούμεν ἢ πάσχομεν, 415 b 8, 11, 416 b 22, 434 b 12; cf. *Metaph.* 1038 b 5 διχῶς ὑπόκειται, ἢ τόδε τι ὡς περ τὸ ζῶον τοῖς πάθεσιν, ἢ κτέ.

a 10. ἐστὶ τῶν χαλεπωτάτων, i.q. ἐστὶ χαλεπώτατον. This predicative use of the partitive gen. has become a mere trick of style, e.g. *Pol.* 1339 a 17 ταῦτα γὰρ καθ' αὐτὰ μὲν οὔτε τῶν σπονδαίων ἀλλ' ἡδέα. Cf. τῶν ἀδυνάτων ἐστίν, *Pol.* 1287 b 22, 1294 a 1, 1329 a 9; ἐστὶ τῶν ἀναγκαιοτάτων, *id.* 1273 a 32. Occasionally the fuller form is retained as below, 406 a 2 ἐν τι τῶν ἀδυνάτων. Cf. *Pol.* 1291 a 8, 1332 b 32, 1340 b 23 sq.; *Ind. Ar.* 149 b 2; Waitz ad *Top.* IV. 2, 121 b 36.

a 11. λαβεῖν τινα πίστιν. As generally, λαβεῖν means to "get," "ascertain" or "find out," just as ἔχειν = to have as a result of enquiry (cognovisse). πίστις, like Latin *fides*, is trustworthy information, or "ground of belief."

a 11 καὶ γὰρ...12 ἐτέροις. Why the enquiry is so difficult is now explained; γὰρ introduces the reason, which, stated in the briefest terms, is the absence of any uniform logical method of obtaining a real definition. The complaint is familiar to the readers of *Anal. Post.*, much of Bk II. of that work being devoted to pointing out the defect and proposing various ways of remedying it. πολλοῖς ἐτέροις, masculine, other enquirers, distinct from ὁ περὶ ψυχῆς ἐπισκοπῶν.

a 12. τοῦ περὶ τὴν οὐσίαν καὶ τὸ τί ἐστὶ, sc. ζητήματος, λέγω having no effect upon the construction. καὶ is again explicative, οὐσία is now glossed by τὸ τί ἐστὶ as just before (a 7) by φύσις. τί ἐστὶ has become a sort of indeclinable noun. Cf. τί ἦν εἶναι and various prepositional phrases, e.g. καθ' ἕκαστον, καθόλου. *Ind. Ar.* 763 b 10 qui quaerit τί ἐστὶ is ipsam rei naturam quaerit, non quaerit eius accidentia. ad eam quaestionem, qua respondetur formula τὸ τί ἐστὶ nominis vim induit, cuius usus eandem habet varietatem, ac verbi εἶναι et



nominis οὐσία. But the answer to the question τί ἐστι is wider than a true definition. It might be any rough description sufficient to identify the thing in question provided it excluded everything merely unessential or accidental, leaving only what is ἀναγκαῖον. Thus the genus will answer the question τί ἐστι, but without the *differentia* would not be a complete definition. See below a 23, where the *summa genera* are meant, and *Top.* I. 5, 102 a 31—35. Compare *Top.* VI. 5, 142 b 27 τὸ δὲ γένος βούλεται τὸ τί ἐστι σημαίνειν, καὶ πρῶτον ὑποτίθεται τῶν ἐν τῷ ὀρισμῷ λεγομένων. Or again, either ὅλη or τὸ σύνολον ἐξ ὅλης καὶ εἰδους would answer the question τί ἐστι, but would not furnish the definition we seek. We arrive at the true definition when we have collected all that can be thus predicated of the thing ἐν τῷ τί ἐστιν, and arranged these various parts in the proper order. *Ind. Ar.* 763 b 47 si quis τὰ ἐν τῷ τί ἐστι κατηγορούμενα et omnia compleverit et suo ordine posuerit, τὸ τί ἦν εἶναι vel τὸν ὀρισμὸν constituit. *Anal. Post.* I. 22, 82 b 37 sqq., *Top.* VII. 3, 153 a 15—21, *Anal. Post.* II. 6, 92 a 7 τὸ τί ἦν εἶναι τὸ ἐκ τῶν ἐν τῷ τί ἐστιν ἴδιον (Wz., ἰδίον Bk.). Cf. also *De A.* 430 b 28. In the foregoing the definition of a *thing* is made prominent. But science has to investigate and define attributes and properties as well as things. Thus we may enquire τί ἐστι λεῦκον; τί ἐστι τρίπηχυ; τί ἐστι κίνησις; and so through all the categories. Hence τὸ τί ἐστι as a noun may denote any of the categories, *Metaφh.* 1030 a 18—20. It belongs ἀπλῶς to οὐσία, and in a derivative sense to the rest, just as εἶναι itself does: *ib.* a 20 ὥσπερ γὰρ καὶ τὸ ἔστιν ὑπάρχει πᾶσιν ἀλλ' οὐχ ὁμοίως, ἀλλὰ τῷ μὲν πρῶτως τοῖς δ' ἐπομένως, οὕτω καὶ τὸ τί ἐστιν ἀπλῶς μὲν τῇ οὐσίᾳ πῶς δὲ τοῖς ἄλλοις. And the same applies to τὸ τί ἦν εἶναι: *ib.* 1030 b 4—7. Lastly, there is a further case, of which λευκὸς ἄνθρωπος is a type. This, too, has its τί ἐστι and can be defined, though again in a different sense from either ἄνθρωπος or λευκόν: *ib.* 1030 b 12 sq.

a 13. μία τις εἶναι μέθοδος κατὰ πάντων. A single method, it might be thought, applies to all the objects which we seek to define scientifically. The natural expectation that there is some such universal method of finding a definition which all the sciences may adopt proves to be without foundation (see *Anal. Post.* II. cc. 3—7. Cf. *ib.* II. c. 13). The ordinary procedure of the sciences as they existed in A.'s time was to assume the definition or to collect it by induction on the evidence of the senses, *Metaφh.* 1025 b 8 πᾶσαι αὐται [sc. αἱ ἐπιστήμαι] περὶ ὃν τι καὶ γένος τι περιγραφάμεναι περὶ τούτου πραγματεύονται, ... οὐδὲ τοῦ τί ἐστιν οὐδένα λόγον ποιοῦνται, ἀλλ' ἐκ τούτου [sc. τοῦ γένους] αἱ μὲν αἰσθήσει ποιήσασαι αὐτὸ δῆλον, αἱ δ' ὑπόθεσιν λαβοῦσαι τὸ τί ἐστιν, οὕτω τὰ καθ' αὐτὰ ὑπάρχοντα τῷ γένει περὶ ὃ εἰσιν ἀποδεικνύουσιν ἢ ἀναγκαιότερον ἢ μαλακώτερον. διόπερ φανερόν ὅτι οὐκ ἔστιν ἀπόδειξις οὐσίας οὐδὲ τοῦ τί ἐστιν ἐκ τῆς τοιαύτης ἐπαγωγῆς, ἀλλὰ τις ἄλλος τρόπος τῆς δηλώσεως ὁμοίως δ' οὐδ' εἰ ἔστιν ἢ μὴ ἔστι τὸ γένος περὶ ὃ πραγματεύονται οὐδὲν λέγουσι, διὰ τὸ τῆς αὐτῆς εἶναι διανοίας τό τε τί ἐστι δῆλον ποιεῖν καὶ εἰ ἔστιν. In mapping out a new province of knowledge, and in projecting the organisation of a new department of enquiry, the defect here mentioned, the want of a short and easy road to definitions, would naturally be felt. κατὰ c. gen. is used after εἶναι and ὑπάρχειν, and even after κοινόν, in much the same sense as after verbs of predication, λέγεσθαι, κατηγορεῖσθαι, the technical expressions καθόλου and κατὰ παντός (*Anal. Post.* I. 4, 73 a 28 sqq.) being evidence how wide this usage is: Eucken, *Über die Praepositionen*, p. 40, observes that ἐπὶ c. gen. et dat., περὶ c. gen. et acc. are almost equivalent.

a 15. ὥσπερ...ἀπόδειξις. The nature and functions of demonstration or demonstrative proof are the subject of *Anal. Post.* I., where they are fully treated. Very briefly, A.'s position is that, since all extension of knowledge depends upon previous knowledge, demonstration implies undemonstrated

premisses or principles, from which by syllogistic reasoning conclusions true and necessary are obtained in a particular province. Geometry is the typical demonstrative science, and Euclid's elements illustrate its application to the extension of knowledge. Cf. *Anal. Post.* I. 7, 75 a 39 τρία γάρ ἐστι τὰ ἐν ταῖς ἀποδείξεσιν, ἐν μὲν τὸ ἀποδεικνύμενον τὸ συμπέρασμα· τοῦτο δ' ἐστὶ τὸ ὑπάρχον γένει τινὶ καθ' αὐτό [the κατὰ συμβ. ἴδιον of our present lemma. Cf. *Them.* 2, 14 sq. H., 3, 11 Sp., *Philop.* 31, 22 sq., *Simpl.* 9, 33 sq.], ἐν δὲ τὰ ἀξιώματα· ἀξιώματα δ' ἐστὶν ἐξ ὧν. τρίτον τὸ γένος τὸ ὑποκείμενον, οὗ τὰ πάθη καὶ τὰ καθ' αὐτὰ συμβεβηκότα δηλοῖ ἡ ἀπόδειξις. Occasionally A. twits those whom he is criticising with ἀπαιδευσία on the ground that they have not mastered the true nature of demonstration with its three indispensable elements, the γένος or περὶ ὅ, the premisses ἐξ ὧν and the conclusion, so that they irrationally demand a proof of everything, e.g. *Μεταφ.* 1006 a 5—11, 1005 b 2—4. As to the conjunction of ἴδια and κατὰ συμβεβηκός, the latter must be taken in the sense explained above (on a 8) ὅσα συμβέβηκε; otherwise they could not be demonstrated: *Anal. Post.* I. 6, 75 a 18 τῶν συμβεβηκόντων μὴ καθ' αὐτὰ...οὐκ ἔστιν ἐπιστήμη ἀποδεικτική, *ib.* I. 30, 87 b 19 sqq. The passage in *Τοφ.* v. 1, 128 b 16 sqq. (cf. *ib.* 3, 131 a 27, b 1—6), where ἴδιον is divided into (1) καθ' αὐτὸ καὶ αἰεὶ, and (2) πρὸς ἕτερον καὶ ποτέ, belongs to dialectic not science, and the examples given of (2) lie outside theoretical science in which all the attributes demonstrated must be αἰδία καὶ ἀναγκαῖα. Cf. *Μεταφ.* 1025 a 30 λέγεται δὲ καὶ ἄλλως συμβεβηκός, οἷον ὅσα ὑπάρχει ἐκάστω καθ' αὐτὸ μὴ ἐν τῇ οὐσίᾳ ὄντα...καὶ ταῦτα μὲν ἐνδέχεται αἰδία εἶναι, ἐκείνων δ' [accidents proper, τῶν μὴ καθ' αὐτὰ] οὐδέν. As a technical term of logic ἴδιον is defined, *Τοφ.* I. 5, 102 a 18 ὁ μὴ δηλοῖ μὲν τὸ τί ἦν εἶναι, μόνον δ' ὑπάρχει καὶ ἀντικατηγορεῖται τοῦ πράγματος (i.e. eius notionis, cui tamquam ἴδιον tribuitur; *Ind. Ar.* 339 b 18). Contrast *Τοφ.* I. 5, 102 b 4—26. Cf. *Μεταφ.* 1025 b 7—13: each separate science having marked off its province, γένος, and somehow empirically obtained or provisionally assumed a definition of it, proceeds to deduce the essential attributes of that γένος, τὰ καθ' αὐτὰ ὑπάρχοντα τῷ γένει, here called ἴδια.

a 18 δεήσει γὰρ...19 τίς ὁ τρόπος. If we assume that there are various methods of arriving at a definition, the difficulty is increased, because in investigating any single department (περὶ ἐκάστου τῶν ὄντων) we must first ascertain which of these various methods is appropriate to that department (τίς τρόπος οἰκίος: *Them.* 2, 18 H., 3, 16 Sp.): cf. *Philop.* 32, 2 ποῖα μεθόδω ἐπὶ ποίων πραγμάτων χρηστέον.

a 19. εἰν δὲ φανερόν ἤ. *Philop.* 32, 5 τοῦτο ὡς ἐν ὑποθέσει λέγει. This suggestion seems reasonable. A. himself would not seriously identify the method of obtaining definitions with ἀπόδειξις τις or διαίρεσις. See next notes. What he now urges is that the application as well as the choice of the method is attended with difficulty. *Simpl.* 10, 4 sqq. thinks the whole sentence an explanation (ἐξήγησις) of the words (a 18 sq.) δεήσει γὰρ λαβεῖν περὶ ἑκάστου τίς ὁ τρόπος. The problem of determining which method is applicable to a special case is the problem of discovering from what principles we must start in framing the appropriate definition. *Simpl.* 10, 7 ἔπεται γὰρ καὶ τούτοις ζητεῖν, ἐκ τίνων ἀρχῶν ὁ ἴδιος ἐκάστου ἀποδοθῆσεται ὁρισμός.

a 19. πότερον ἀπόδειξις τίς ἐστιν. Tis quod in quibusdam libris omittitur, id casu factum est. Nam quoniam (a 15) posuimus demonstrationem esse τῶν κατὰ συμβεβηκός ἰδίων, si demonstratio etiam est τῆς οὐσίας καὶ τοῦ τί ἐστιν, erit sane alia species demonstrationis, ἀπόδειξις τις. *Μεταφ.* 1059 a 30 εἰ γὰρ περὶ γε τὰ συμβεβηκότα ἀπόδειξις ἐστιν, περὶ τὰς οὐσίας οὐκ ἔστιν. 997 a 2 sqq. e quibus haec opponimus, (a 25) ἔτι δὲ πότερον περὶ τὰς οὐσίας ἢ θεωρία μόνον ἐστὶν ἡ καὶ

περὶ τὰ συμβεβηκότα ταύταις...εἰ μὲν γὰρ τῆς αὐτῆς, ἀποδεικτική τις ἂν εἴη καὶ ἡ τῆς οὐσίας· οὐ δοκεῖ δὲ τοῦ τί ἐστὶν ἀπόδειξις εἶναι (Torst. p. 113). Cf. *Metaph.* 1025 b 14 διόπερ φανερόν ὅτι οὐκ ἔστιν ἀπόδειξις οὐσίας οὐδὲ τοῦ τί ἐστὶν ἐκ τῆς τοιαύτης ἐπαγωγῆς, ἀλλὰ τις ἄλλος τρόπος τῆς δηλώσεως. Stapfer, *Krit. Stud.*, p. 28, urges that the alternatives would be more sharply defined if, with E, we omit *τις*, contrasting the use of the pronoun, "richtig gesetzte *τις*," 402 a 13, 20. But, in view of Torstrik's citations, even the hypothetical mention of ἀπόδειξις in this connexion needs some qualification, and *τις*="of a sort" is half ironical, half apologetic. The relation of demonstration to definition is fully discussed in *Anal. Post.* II. cc. I—II. The two processes are wholly dissimilar. It is impossible to demonstrate essence or to obtain a definition by demonstration alone. All such attempts involve a *petitio principii*. Cf. *Anal. Post.* II. 3, especially 90 b 18—91 a 8, *ib.* II. 7, 92 b 35—39, *ib.* II. 8, 93 b 15—20. But where to know what a thing really is is the same as to know why it is (*Anal. Post.* II. 2, 90 a 15, 31), and the question, "What is the real nature of a thing?" can be interpreted to mean, "What is the cause which makes the thing what it is?" then the search for definitions becomes virtually a search for causes in which demonstration and the syllogism play an important part: *Anal. Post.* II. 8, 93 a 1—15 (the passage ends with the words: οὗτος μὲν οὖν ὁ τρόπος—this method of defining—ὅτι οὐκ ἂν εἴη ἀπόδειξις εἰρηται πρότερον. ἀλλ' ἔστι λογικὸς συλλογισμὸς τοῦ τί ἐστὶν), *ib.* II. 10, 93 b 38—94 a 10. This subsidiary use of demonstration is illustrated 413 a 16—20. Similarly at the end of III. 3 A. claims to have ascertained at once the essence and the cause of imagination; having explained the process from its causes, 428 b 10 sqq., he has been able to define it: 429 a 8 περὶ μὲν οὖν φαντασίας, τί ἐστὶ καὶ διὰ τί ἐστὶν, εἰρήσθω ἐπὶ τοσοῦτον. No logical instrument demonstrates that a combination of certain elements makes up the essence to be defined, *Anal. Post.* II. 5, 91 b 24 sqq., *Metaph.* 1037 b 10 sqq.: all we show is that (ὅτι), or why (διότι) an attribute can be predicated of a subject. In other words, given a knowledge of the facts (τὸ ὅτι) and the cause (τὸ διότι), the definition can be discovered and recognised as such, and the practical rules laid down employ demonstration, especially demonstration *a posteriori* of the cause from the effect, and demonstration that the elements of the definition are essential attributes of the definiend.

a 20. ἡ διαίρεσις. Analysis of a genus into its species, of these into their sub-species, and so on until we come to the lowest or ultimate species containing only individuals. This process of obtaining a definition is employed by Plato, e.g. in *Sophist* and *Politicus*. A. criticises the process (*Anal. Prior.* I. 31, 46 a 32 sq., *Anal. Post.* II. 5, 91 b 14 sqq.), pointing out that it always involves a *petitio principii*. But in his own practical rules A. employs division as a subsidiary process, *ib.* II. 13, 96 b 25 sqq. ἡ καὶ *τις* ἄλλη μέθοδος. If these suppositions are not seriously meant, it is unimportant what the reference is. In *Anal. Post.* II. 6 A. rejects the claims of hypothetical proof of definition and proof by definition of the opposite. When all false claims are disallowed we fall back presumably upon sense-perception and induction: see *note* on a 13. A.'s own method as elaborated in *Anal. Post.* is designated by Them. (2, 20 H., 3, 19 Sp.) σύνθεσις μᾶλλον. Zabarella calls it *via compositiva*.

a 21. πλάνος. Cf. *Eth. Nic.* 1094 b 15 τοσαύτην ἔχει διαφορὰν καὶ πλάνην. A favourite Platonic term for mental perplexity and error, e.g. *Rep.* 444 B, *ib.* 505 C, *Phaedo* 81 A, *Parm.* 135 E τὴν πλάνην ἐπισκοπεῖν. ἐκ τίνων δεῖ ζητεῖν. The search for a definition may start from a higher genus: Philop. 32, 12 τουτέστιν ὑπὸ ποῖον γένος ἀνάγομεν τὸ προκείμενον πρᾶγμα, ἐπεὶ οὐχ ἓν γένος τῶν ὄντων ἀλλὰ δέκα.....22 ζητοῦμεν οὖν, φησὶν, ὑπὸ ποῖον γένος ἀνάγεται τὸ

προκείμενον (πολλῶν γὰρ τὸ γένος ἀμφισβητήσιμον), ἵνα εὐρόντες τοῦτο καὶ διελόντες εἰς τὰς οἰκείας διαφορὰς οὕτω τοὺς ὁρισμοὺς ἀποδῶμεν. Or, again, it may start from particulars and proceed by induction, though this procedure will require subsidiary processes; see the rules laid down in *Anal. Post.* II. 13 and *Top.* VI. 1. The procedure in *De A.* II., c. 1 resembles in the main the former, though with peculiarities of its own.

ἄλλαι γὰρ ἄλλων ἀρχαί. The definitions of the unit and of number as the sum of units (τὸ ἐκ μονάδων συγκείμενον πλήθος) belong to discrete quantity (διωρισμένον ποσόν), whereas those of surface and of line belong to continuous quantity (τὸ συνεχές). Such definitions form the starting-points or principles of the respective sciences. To the conclusions of the science they are related as cause to effect (διὰ τί): *Phys.* II. 7, 198 a 16—18 ἡ γὰρ εἰς τὸ τί ἐστὶν ἀνάγεται τὸ διὰ τί ἔσχατον ἐν τοῖς ἀκινήτοις, οἷον ἐν τοῖς μαθήμασιν (εἰς ὁρισμὸν γὰρ τοῦ εὐθέως ἢ συμμετρου ἢ ἄλλου τινὸς ἀνάγεται ἔσχατον) ἢ εἰς τὸ κινήσαν πρῶτον, οἷον διὰ τί ἐπολέμησαν. See also *note* on 402 b 18 ὥσπερ ἐν τοῖς μαθήμασι.

**402 a 23—b 8.** The problems which more particularly concern the definition of soul and the investigation of its essential properties are: (1) To what category does the soul belong? (2) Is it potentially or actually existent? [§ 3] (3) Is it divisible or indivisible? (4) Is it throughout homogeneous? If not, does the difference between soul and soul amount to a difference of genus or only of species? In contemporary discussion the soul of man stands for soul in general [§ 4]. (5) Does soul, like animal, admit of a single definition, or must we rest content with definitions of the several species of soul? [§ 5].

a 23. πρῶτον δ' ἴσως. If we mean to proceed with the task of defining the soul, there are certain problems to be solved which A. now states explicitly, though, contrary to his usual custom, he omits the arguments for and against, except in the case of the last, 403 a 3, and even then the discussion is of the briefest. *Ind. Ar.* 347 b 32 saepe ἴσως non dubitantis est, sed cum modestia quadam asseverantis. Cf., e.g., 405 b 31. διελεῖν, "distinguish" or rather "determine." *Ind. Ar.* 180 a 22 ex distinguendi significatione [cf. *ib.* 179 b 54 distinguere genus aliquod in species] διαρεῖν abít in notionem disputandi, explorandi, explicandi. Cf. *Pol.* 1339 a 14 οὕτε γὰρ τίνα ἔχει δύναμιν ῥάδιον περὶ αὐτῆς διελεῖν, *ib.* 1299 a 12, 1300 b 18, 1341 b 31. On *Pol.* 1321 b 4 Newman remarks, "Διαρεῖν seems here to be used in the sense of διορίζω, as in 1289 b 12 and elsewhere." τῶν γενῶν=(a 25 and 410 a 15) τῶν διαμεθευσῶν κατηγοριῶν, the table of the ten categories being at once a classification of predications or attributes predicated of a subject and the *summa genera* of all that exists (γένη τοῦ ὄντος). Ultimately these ten *summa genera* may be reduced to two, viz. substance on the one hand, and its appendages quality, quantity, relation, etc. on the other. See *Metaφh.* 1028 a 10—b 7, 1045 b 27—32, 1069 a 18—24. καὶ τί ἐστι. καὶ explicative, as also in the following line τόδε τι καὶ οὐσία: *Simpl.* 10, 27 προστέθεικε καὶ τί ἐστὶ σαφηνίζων τί δηλοῖ τὸ ἐν γένει εἶναι, ὅτι καθ' ὃ τί ἐστὶν (i.e. in what respect it is something), ὥσπερ ἐν διαφοραῖς καθ' ὃ τοιόνδε: *Philop.* 33, 16 ἐκ διαρέσεως δεῖ λαβεῖν αὐτῆς τὸ γένος, ὅπερ γένος ἐν τῷ τί ἐστὶ κατηγορεῖται. Philoponus, anticipating II., c. 1, means that soul will ultimately be found under the category of substance, τὸ τί ἐστὶ=τόδε τι καὶ οὐσία.

a 24 λέγω δὲ...25 κατηγοριῶν. *Simpl.* 10, 28 ἀμφισβητεῖται δὲ ἐπὶ ψυχῆς, εἰ τὸ γένος αὐτῆς οὐσία ἢ ποιὸν ἢ ποσόν. Simplicius thinks that substance, quality and quantity are explicitly mentioned because they found support in the views current at the time: e.g. the Pythagoreans and Plato made soul a substance, the theory of harmony (I. 4) made it a quality and Xenocrates a quantity. But the enumeration of Categories takes precisely the same form

in 410 a 14 sq., where there is certainly no such allusion. It is indeed quite a common form of citing the categories, being found in eight other passages, while in six more these three most important categories are specified without the addition of "et cetera." See Apelt, *Beiträge zur griech. Philosophie*, p. 140 sq.

a 25  $\epsilon\tau\iota$  δὲ...26 ἐντελέχεια  $\tau\iota\varsigma$ . To explain this second problem we must bear in mind that of the four significations of the ambiguous term Being or  $\delta\upsilon$  the last is possible and actual being (*Metaph.* 1017 b 1). This distinction concerns merely the modality of Being in whatever category it is found, and A.'s examples are in fact drawn from various categories. He gives  $\delta\rho\omega\nu$ , ἐπίστασθαι, ἡρεμοῦν 1017 b 2 sqq., τὸ θερμὸν 1046 a 26, οἰκοδομεῖν 1046 b 30 sqq., βαδίζειν 1047 a 23. Simpl. 11, 3—6 equates ἐντελέχεια with εἶδος, and supposes ἐν δυνάμει  $\delta\upsilon$  to include not only ὕλη but also τὸ σύνθετον ἐξ ὕλης καὶ εἶδους. A. had the category of substance chiefly in view, but his statements ought to admit of extension to the other categories. Cf. Them. (2, 38 H., 4, 16 Sp.) δεύτερον ἦν ἡ ἀνὰ τὸ γένος διακριθῆ, ἐπειδὴ διχῶς ἕκαστον λέγεται γένος...εἴπερ οὖν τὴν οὐσίαν εὖρομεν τῆς ψυχῆς, ἐν τίνι τῶν διαφορῶν τούτων ἀποσπῆσθαι, ἀρ' ὡς δύνανται ὑποκειμένη καὶ πρὸς οὐσίαν ἔχουσα εὐφυῶς, ἢ μᾶλλον ὡς ἐντελέχεια; the addition of  $\tau\iota\varsigma$  points to the probability that further qualification is necessary: Simpl. 11, 15  $\delta\tau\iota$  μὴ ἀπροσδιορίστως καὶ ἀπλῶς ἔστιν ἐντελέχεια ἀλλ' ὑποβεβηκότως, though I should not go so far as Them. (3, 4—6 H., 4, 26—28 Sp.), who sees a distinct anticipation of 412 a 10 sq., 22—28.

402 b 1. μεριστή ἢ ἀμερής. This question, to which A. returns 411 b 5—30, 413 b 11—414 a 1, 432 a 22—b 7, does not admit of an unqualified answer. It depends upon the meaning we assign to the term part and its correlative whole (cf. *Metaph.* Δ. 25 sq.). Speaking generally, μέρη=eis ἃ διαιρεῖται καὶ ἐξ ὧν σύγκειται τὸ ὅλον, but A. is careful to add (1023 b 20) ἢ τὸ εἶδος ἢ τὸ ἔχον τὸ εἶδος. Any quantity (ποσόν) has quantitative parts: in this sense part is not applicable to the soul, if it is neither μέγεθος (407 a 2 sq.) nor ποσόν at all (410 a 21). Cf. Alex., *De A.* 30, 29 ἢ δὲ ψυχὴ οὐ μόνον οὐχ ὡς μέγεθος, ἀλλ' οὐδ' ὡς ἀριθμὸς ἔστι μεριστή. But non-quantitative wholes may be broken up by logical analysis, genera into species, species into sub-species: cf. 430 b 14, Them. (3, 7 H., 5, 1 Sp.) καὶ εἴπερ φανεῖν μεριστή, πρότερον ὡς σῶμα καὶ ὄγκος, ἢ ὡς τέχνη καὶ ἐπιστήμη. Further, the definition has parts (τὰ ἐν τῷ λόγῳ δηλοῦντι ἕκαστον) more general than itself, *Metaph.* 1023 b 24, cf. 1034 b 20 sqq. Hence, when A. returns to this question 413 b 13 sqq., 429 a 11, he contrasts the logical distinctness of the parts, their separateness to thought (λόγῳ ἑτέρα, χωριστά) with spatial distinctness, the separateness of extended objects (κατὰ τόπον, κατὰ μέγεθος χωριστά).

b 1. πρότερον ὁμοειδής. Them. (3, 16 H., 5, 13 Sp.) τέταρτον ἂν εἴη ζήτημα τῶν εἰρημένων, ἀρα ὁμοειδής πᾶσα ψυχὴ πρὸς πᾶσάν ἐστιν, ἢ οὐδαμῶς, καὶ εἴπερ ὑφ' ἑτερον καὶ ἑτερον εἶδος, ἀρ' οὐδ' ὑφ' ἐν γένος; οἶον ἢ ἀνθρώπου καὶ ἵππου· εἰ δὲ μὴ ταῦτον ἔχουσιν εἶδος ψυχῆς, ἀρ' οὐδὲ γένος ταύτων; ἀλλ' ὁ μὲν ἀνθρώπος καὶ ἵππος ὑπὸ τὸ ζῶον, αἱ ψυχὰι δὲ αὐτῶν οὐκέτι καὶ ὑφ' ἐν γένος ψυχῆς; ταῦτα δὲ οὐχ οἷον τε διακρίναι τὰ προβλήματα μὴ περὶ πάσης ψυχῆς ἐπισκοπούμενους, ὅπερ ἔνιοι τῶν πρότερον παρεώρων. The term ὁμοειδής is applied to air (411 a 21: cf. a 17, 18) and to the other elements, e.g. water, *Metaph.* 1014 a 30 sq., fire, *De Caelo* I. 8, 276 b 5 sq.: again, to the plurality of mathematical objects, *Metaph.* 1002 b 14—21 (with πόλλ' ἄλλα ὁμοειδῆ cf. 987 b 17 πόλλ' ἄλλα ὁμοία). The great examples are arithmetical units, which are ἀδιάφοροι, 409 a 1 sq.: cf. 409 a 18—20.

b 2. ἅπαντα. Atticorum more, sicut p̄asa, unaquaeque; cf. Heind. ad Pl. *Phaed.* p. 108 B. Neque enim quaeritur, ut ex sequentibus patet, an animus

totus similes in se partes habeat sed potius an animae eandem inter se speciem referant (Trend.). Heindorf's note is as follows: "ἅπας φεύγει. Sic, de quo vir doctus dubitabat, ἅπας, *υπυσquisque*, pro πᾶς positum et *Politic.* 259 C βασιλεὺς ἅπας. *De Legg.* 1. 628 B ὃν μάλιστα μὲν ἅπας ἂν βούλοιο μὴδ' γενέσθαι ποτέ, etc. Eurip. *Bacch.* 70 στόμα τ' εὐφημον ἅπας ὀσιούσθω." Cf. Them. (3, 16 H., 5, 14 Sp.) πᾶσα πρὸς πᾶσαν... (cited above); Simpl. 12, 2 ἀλλήλαις αἱ ψυχαὶ πᾶσαι. Philop. 36, 9 αἷται οὖν, φησίν, αἱ ἐν πᾶσιν ἀπλῶς τοῖς ἐμψύχοις ψυχαί. But in πᾶσα ψυχὴ ἀθάνατος the word is hardly distributive, rather "all soul" or "soul in all its forms." This meaning need not be excluded here. Cf. 411 a 18 sq.

b 2. πότερον εἶδει διαφέρουσιν ἢ γένει. On the terms ἔτερον τῷ εἶδει, ἔτερον τῷ γένει see *Metaph.* 1057 b 35—1059 a 14. If we assume a plurality of souls more or less unlike corresponding to the plurality of animals (cf. b 9 πολλὰι ψυχαί), and if we further assume that they belong to a variety of species, is this the limit of the difference between them, or are they so unlike that they are incapable of being brought under the same genus? Any two things ἔτερα τῷ εἶδει must belong to the same genus, *Metaph.* 1057 b 37 τὸ γὰρ τοιοῦτον γένος καλῶ, ὃ ἅμφω ἐν ταῦτ' λέγεται μὴ κατὰ συμβεβηκὸς ἔχον διαφοράν, εἴθ' ὡς ὕλην ὃν εἴτ' ἄλλως. Thus, if these conditions are fulfilled, there would be a genus soul. If however the soul in some cases is immortal, in others mortal, these souls could hardly belong to the same genus, cf. 413 b 26.

b 3. νῦν. Cf. *Eth. Nic.* 1144 b 21, *Pol.* 1268 a 11 and note on 408 b 20.

b 4. περὶ τῆς ἀνθρωπίνης, int. ψυχῆς. It is implied that they neglected the phenomena of life in all its other forms, including plants. Obviously the solution of the present problem presupposes a comparative study of all species of animals and (cf. 411 b 27 sq.) plants. For A.'s own procedure the precept given 414 b 32 is ὥστε καθ' ἕκαστον ζητητέον, τίς ἐκάστου ψυχῆ, οἷον τίς φυτοῦ καὶ τίς ἀνθρώπου ἢ θηρίου. Alex. Aphr. apud Philop. 36, 13 and Simpl. 12, 31 sqq. think the criticism is aimed at Plato, especially in the *Timaeus*, where, however, the soul even of the plant is distinctly recognised (77 A, B), and everything which partakes of life is declared to be a ζῷον and to have some sort of soul. Philop. 36, 16 sqq. takes the reference to be general, including Democritus and the other physicists.

b 5 πότερον εἰς...8 ἢ ὕστερον. Knowledge is of the universal, definition of the universal, i.e. the form (*Metaph.* 1036 a 28 sq.). Particular souls and particular animals differ, but all animals belong to the genus animal, though they also belong to different species, horse, man, dog. Is, then, the genus animal the type of universality by which soul is known and defined, or shall we seek distinct definitions of the species? The settlement of this question will have a direct bearing on procedure. If we take the first alternative, a study of the genus, in which are united all the common characteristics of soul, will precede the study of the different varieties. If we favour the second alternative, the study of the varieties should come first, for the genus is a logical entity and not the constitutive form of any of the particulars of which it is predicated. It is part of that form and part only. There is another view of the passage. Some take it that the preceding question is presumed to be decided in the sense that the difference between souls is a specific and not a generic difference, so that it only remains to consider what is the nature of the genus to which they all belong. It may be (1) such that they are, in technical language, *συνώνυμα* (ἔν τὸ τε ὄνομα κοινὸν καὶ ὁ λόγος ὁ αὐτός, *Cat.* I. 1 a 6). If not, they are either (2) *ὁμώνυμα*, having nothing in common but the name, or (3) *πρὸς ἐν λεγόμενα*, forming a γένος κατ' ἀναλογίαν, of which ἐν and ὃν are examples. It is assumed that animal cannot illustrate both alternatives: it cannot, as genus, be

the object of a single definition and at the same time be the non-existent or posterior universal of particulars which admit of several definitions. Hence it is inferred that in the second alternative animal replaces soul and that what is said of it is only true of animal in a supposed and not an actual case: in other words, that soul, unlike animal, is not a genus, because souls form a series, and such a class is destitute of true generality. Alex. Aphr. first gave this explanation, though he afterwards modified or retracted it. He tells us (ἀπ. καὶ λύσ., pp. 22, 23 sqq.) that in his lost commentary on *De A.* he had shown that A. may possibly have used ζῶον as an example to illustrate the different species of soul regarded as related in a definite order of succession (22, 24 sq.). If so, Alex. considered, the example chosen would be fictitious. If man, horse, dog were not *δμογενῆ*, were not, as they are, species of the one genus ζῶον, each of them would require to be separately defined, and either the common term "animal" as applied to all of them would denote no characteristic nature (*οἰκεία φύσις*), but would be employed in an ambiguous or equivocal sense, or, if there were anything objective corresponding to it, it would be like a term of various meanings, of which one is always prior to the other, τὰ πολλαχῶς λεγόμενα ἐν οἷς ἐστὶ τὸ πρότερον καὶ ὕστερον, or classes arranged in series having a definite order of succession. [Examples are found in the numerical series 2, 3, 4, etc., in rectilinear figures (*Μεταφ.* 999 a 6 sqq.) and in constitutions (*Πολ.* 1275 a 34 sqq.): probably also in such notions as *ὕμεινόν* and *ἀγαθόν*. The common characteristic is present in varying degrees in different members of such a class, being hardly discernible in some: *Πολ.* 1275 a 37 ἢ τὸ παράπαν οὐδ' ἔνεστιν, ἢ τοιαῦτα, τὸ κοινόν, ἢ γλίσχρως.] Alex. continues (23, 13) τὸ δ' ἐν οἷς τὸ πρότερον καὶ ὕστερόν ἐστιν, ἀναιρουμένῳ τῷ πρώτῳ ἔχοντι τὸ ὑπ' αὐτοῦ σημαζόμενον συναναίρεται, διὸ οὐκέτι πρῶτον ἀλλ' ὕστερον γίνεται. τοιοῦτον δὲ δείξει καὶ τὴν ψυχὴν ὄν. This, the earlier explanation of Alex., is accepted amongst others by Zabarella, who argues that in Book II. A. declares soul to be *communis quid analogum*, and therefore its generic definition is insufficient: we need the specific definitions of the several parts of soul in order to complete our knowledge. According to him, animal is *genus univocum*, soul is *genus analogum* with nothing objective answering to it except the name and the individual souls. Hence the definition of animal gives some information, though incomplete; the generic definition of soul gives no knowledge, unless accompanied by the knowledge of the several parts of soul. The obvious defect in this explanation is the choice of a fictitious example. To remedy this defect Alex. proposes to show (ἀπ. καὶ λύσ., 21, 19; 23, 21) that after all A.'s words ἢ οὐδὲν ἐστὶν ἢ ὕστερον are true of animal and of genera properly so called, provided that we carefully distinguish between ζῶον = οὐσία ἐμψυχος αἰσθητική, which is something existent, a thing with attributes (ὄν τι πρᾶγμα), and τὸ ὡς γένος ζῶον, animal as genus or universal, which is properly nothing but merely an attribute of things (τινῶν ὄν, συμβεβηκὸς πρᾶγματι, σύμπτωμα ἐπὶ τῷ γινόμενῳ πρᾶγματι). Strictly the genus is not ὄν τι, but, if by courtesy we include it among ὄντα, it is decidedly posterior logically to the individual members which belong to it. This Alex. proves in the usual way. Suppose the genus animal annulled in thought, this would leave unaffected the existence of particular animals, whereas the destruction of the members of the genus necessarily implies that the genus ceases to exist. Here, it will be observed, he comes to a conclusion concerning the true genus diametrically opposite to that which he had previously reached in his commentary on the *De A.*, viz. (23, 11) τὸ μὲν γὰρ ὡς γένος τινῶν κατηγορούμενον ἀναιρούμενον συναναίρει αὐτῷ πάντα τὰ ὑφ' αὐτό, ὄν οὐδὲν ἀναιρουμένων συναναίρεται, διὸ πρῶτον τῇ φύσει. It may perplex some to find the problem

first stated for soul, animal being adduced as an illustration, while afterwards A. goes on to speak of animal, the illustration, leaving soul out of sight. But to lose the immediate subject in the illustration is quite in A.'s manner. Cf. 403 a 12 sqq., 431 a 17 sqq. Further, there is good reason why he should begin with soul and continue with animal; for the latter term is in his view equally applicable to both; at any rate he allows such a view to be tenable. Cf. *Metaφh.* 1043 a 34 καὶ ζῶον πότερον ψυχὴ ἐν σώματι ἢ ψυχὴ...εἴη δ' ἂν καὶ ἐπ' ἀμφοτέροις τὸ ζῶον, οὐχ ὥς ἐνὶ λόγῳ λεγόμενον ἀλλ' ὥς πρὸς ἔν. The possibility of such a double application is impartially admitted *Metaφh.* 1036 a 16—19, 24 sq., 1037 a 5—10. When we speak of defining, it is always with the tacit assumption that the particular, as such, the compound of form and matter which is perishable and subject to change, is incapable, properly speaking, of being defined: *Metaφh.* 1039 b 20—1040 a 7. If animal denoted an infima species instead of a genus, the identity of animal and soul for the purpose of definition would be complete; but this is not the case. Animal, as universal, like man as universal, denotes a class which, like its individual members, is a σύνολον or compound of form and matter, form capable, matter incapable, of definition: *Metaφh.* 1035 b 27—30, 1037 a 5—7. Such a class is not οὐσία (1035 b 28, 1038 b 8—16, 35), for it denotes not τόδε τι but τοιόνδε (1039 a 1 sq., 16). This is what A. means by ἡ οὐδέν ἐστιν=οὐκ ἔστιν οὐσία τοῦ ζῶου τοῦ καθόλου. As a mere universal notion or class-name, animal denotes the common characteristic or characteristics by which species are combined in a genus; and similarly man, as mere universal, denotes the common characteristic or characteristics by which particular men are combined in an infima species. In other words, animal is neither ἐν παρὰ τὰ πολλὰ nor ἐν ἐπὶ πολλῶν, but simply ἐν κατὰ πολλῶν or κοινῇ κατηγορούμενον (402 b 8). Nevertheless, it is ὃν τι, a logical entity, owing its existence to thought: cf. Philop. 38, 3 ἔχει γὰρ τὴν ὑπόστασιν ἐν τῷ νοεῖσθαι, ὥς μέντοι καθ' αὐτὸ ὑφεστηκὸς οὐδέν ἐστι. As thus described, it is ὕστερον, posterior to every member of the class, to every possessor of the characteristic or characteristics which it predicates as held in common: for πάθη are necessarily posterior to οὐσία; otherwise they would exist independently, apart from οὐσία (*Metaφh.* 1038 b 23—29).

But it may be urged that elsewhere καθόλου is described as κατὰ παντός, καθ' αὐτό, ἢ αὐτό, *Anal. Post.* I. 4. 73 b 26 sq., whereby it is given a place ἐν τῷ τί ἐστιν, and that γένος is part of the definition and, as such, prior to the definition of which it is a part (*Metaφh.* Z. c. 10, especially 1034 b 31 sq., 1035 b 14—20). We cannot define man, horse, dog, if we do not know animal, which forms part of the definition of each of these species. A. himself allows full weight to this objection: 1039 a 14—23. But, instead of modifying his view of the universal as μὴ οὐσία and therefore posterior, he is content with the remark that an objection which, if true without qualification, would make definition impossible, must somehow admit of qualification (1039 a 21 sq.). He held that, strictly speaking, infimae species were alone capable of definition, because to them alone belongs the form or quiddity (1030 a 11), which we define (λόγος τῆς οὐσίας) by collecting the essential, and excluding the accidental, characteristics shared by the members of the infima species. Thus we obtain a single definition for the entire species: *Metaφh.* 998 b 12. This method of comparing individuals and obtaining a καθόλου or common predicate is an aid to defining and well adapted to the conditions under which human knowledge is acquired: but the community of predication has really nothing to do with οὐσία. If the species were reduced to a single member, the specific form would continue to be the quiddity of the sole survivor; whereas the genus, e.g. οὐσία ἐμψυχος



αἰσθητικὴ or τὸ τριχῇ διάστατον, is but the matter of a definition and requires to be informed by a differentia before it can express the quiddity of any actual particular: *Metaph.* 1038 a 5 sqq., 1043 b 30—33, 1045 a 34 sq. It is because it is τὸ εἶδος τὸ ἐνόν, ὡς ἴδιον ὑπάρχον τῷ πράγματι, inhering in the particular and informing it, that form or quiddity is defined; and not because it is shared in common by a certain group of particulars. This may be seen if we either enlarge or contract the groups (1) by including horse and dog under the logical entity quadruped, man and fowl under biped, or (2) by setting up a similar logical entity in the artificial groups pointer, pony, albino. When we have reached ἄτομα τῷ εἶδει either from above or below, the end of classification has been attained.

I have assumed that animal, here called τὸ καθόλου, is a genus. We know from *Metaph.* 992 b 12 sq. that in some cases it is impossible for the universal to be a genus (e.g., the highest universals, ἐν and ὄν, are not genera in the same sense as biological classes: 998 b 22, cf. *Anal. Post.* II. 7, 92 b 13). Not that all the things called ὄντα are homonyms without any link of connexion save this common predicate: on the contrary, they are all so called from their relation to οὐσία, substance or Being proper, *Metaph.* 1003 b 5—15. There can, however, be no doubt that animal is a true genus and man, horse, dog true coordinate species or mutually exclusive classes. Yet animal is the example which A. takes when examining the claim of the universal to rank as οὐσία, *Metaph.* Z. c. 13, and his emphatic rejection of the claim, 1038 b 10—1039 a 2, has been referred to above.

In this chapter A. simply states his problems without solving them. This one is solved in 414 b 20 sqq., whence it appears that there is a single definition of soul, as of rectilinear figure, number and, we may add, of animal or any other genus (quadruped, biped, etc.), more general than the infima species. But in all these cases the definition obtained by comparison of individuals is imperfect and inadequate. It needs to be supplemented by the study of the species. I agree with Mr Innes that A. does not base his argument on τὸ ἐφεξῆς at all (*Cl. Rev.* XVI., p. 462): it would be just as valid if the different types of soul were mutually exclusive, like biological classes. In fact, A. studies them as if they were mutually exclusive: he treats, not of the soul of the plant, the jelly-fish, the non-stationary animal, the rational animal, but of θρεπτικόν, αἰσθητικόν, ὀρεκτικόν, νοητικόν.

b 5 πότερον εἰς ὁ λόγος...6 αὐτῆς ἐστί. If souls belong in all cases to the same genus, as all animals to the genus Animal, there will be a single definition of Soul the genus, as there is of the genus Animal. Them. (3, 23 H., 5, 23 Sp.) ἡμῖν δὲ τὴν καθόλου φύσιν ἐπισκεπτέον, ἀρα εἰς ὁρισμὸς καὶ ἐν τὸ τί ἦν εἶναι πάσης ψυχῆς, ἢ ἄλλος μὲν τῆς τοῦ ἀνθρώπου, ἄλλος δὲ τῆς τοῦ ἵππου; *Philop.* 36, 25 ἀποδοθεῖ δ' ἂν εἰς ὁρισμὸς, εἰ ἔχοιεν [int. αἱ ψυχαί] κοινὸν γένος, ὥσπερ τοῦ ζῴου γένους ὄντος ἵππου καὶ ἀνθρώπου καὶ τῶν λοιπῶν εἰδῶν εἰς ὁρισμὸς ἀποδίδεται, *Simpl.* 13, 3 εἰ μὲν γὰρ ὁμοειδεῖς πᾶσαι, εἰς ἔσται πάσης λόγος, ὥσπερ καὶ ἀνθρώπου καὶ ὡς αὐτὸς ἔφη ζῴου, εἰ δὲ ἀνομοειδεῖς, καθ' ἕκαστον εἶδος ἕτερος ἀποδοθήσεται λόγος. The unity of the definition depends on the unity of that which is defined: *Metaph.* 1045 a 12 ὁ δ' ὁρισμὸς λόγος ἐστὶν εἰς οὐ συνδέσμῳ καθάπερ ἡ Ἰλιάς, ἀλλὰ τῷ ἐνὸς εἶναι, cf. 1037 b 24—26. But this unity in the object, in the thing to be defined, must have a cause, 1037 a 19 sq. The *Iliad* is one by the stringing together of the parts, the definition because it signifies a natural whole, of which the parts are held together, not by the coherence of matter, or by coacervation, or by external force, but by an immanent form (ἐντελέχεια καὶ φύσις τις ἐκάστη, *Metaph.* 1044 a 9), distinctive and peculiar: *Poet.* 20. 1457 a

28—30, *Metaph.* 1052 a 16—25. This form or quiddity of an infima species is the object of definition, and strictly speaking, the only thing that can be defined: *Metaph.* 1037 b 25 ὁ γὰρ ὁρισμὸς λόγος τίς ἐστὶν εἰς καὶ οὐσίας, ὥσθ' ἐνός τινος δεῖ αὐτὸν εἶναι λόγον· καὶ γὰρ ἡ οὐσία ἐν τι καὶ τότε τι σημαίνει, ὡς φαμέν, 1030 a 11—13, 1038 a 19 ἡ τελευταία διαφορὰ ἡ οὐσία τοῦ πράγματος ἔσται καὶ ὁ ὁρισμὸς. The reader is referred to *Metaph.* Z. 12 and H. 6.

b 6. καθ' ἐκάστην, restored from the first hand of E by Torstrik who remarks: Quanquam enim notum est substantiva cuiuslibet generis si repetuntur per pronomina vel adiectiva pronominalia, haec posse neutro quod vocamus genere poni, id tamen hoc loco minus commode factum erat: nam καθ' ἑκάστον vult quidem illud referri ad animam, quum vero ζῶν interiectum esset, verendum erat ne ad ζῶν videretur referendum. Accuratus igitur et ab omni ambiguitate remotum καθ' ἐκάστην. Cf. 414 b 32, where the neuter involves no ambiguity, and 418 a 17, *note*. The question here raised aporetically recurs 414 b 20—33, where, as above remarked, it receives its solution.

b 7. θεοῦ. This should cause no surprise. *Top.* v. 4, 132 b 10 sq. τὸ μὲν ζῶν ἐπιστήμης μετέχον ἀληθεύεται κατὰ τοῦ θεοῦ (cf. 128 b 19 sq.), *Metaph.* 1023 b 32 οἷον ἄνθρωπον, ἵππον, θεόν, ὅτι ἅπαντα ζῶα, 1072 b 28 sq., 1088 a 10 εἰ δ' ἄνθρωπος καὶ ἵππος καὶ θεός, ζῶν ἴσως: Plato, *Phaedrus* 246 C, D. On τὰ αἰδία τῶν αἰσθητῶν as gods, cf. 1074 b 2 sqq., 1026 a 18 sqq.

b 7. τὸ δὲ ζῶν τὸ καθόλου. The genus of which man, horse, etc. are species. Like all the rest of the series, this problem is proposed tentatively, as if A. himself had not taken sides in the controversy. His own views on the relation of genus to species are laid down in the *Metaphysics*. See for instance 1038 a 5. Two alternatives are possible, (1) that the genus simply does not exist apart from its species, (2) that it does exist, but ὡς ὕλη; 1038 b 34—1039 a 3, 1039 a 30—b 2 and Z. c. 14 generally; 1040 b 26 δῆλον ὅτι οὐδὲν τῶν καθόλου ὑπάρχει παρὰ τὰ καθ' ἕκαστα χωρὶς; 1041 a 3—5. See also H. M<sup>e</sup>L. Innes, *On the Universal and Particular in Aristotle's Theory of Knowledge*.

b 7. ἦτοι οὐθέν ἐστιν ἡ ὕστερον. So *Metaph.* 1042 a 21 ἔστι τοίνυν οὔτε τὸ καθόλου οὐσία οὔτε τὸ γένος, where A. is recapitulating the results obtained in Z, especially c. 13. Zabarella insists that *essentia*, not *existentia*, is intended. He adds "existentiam A. ut notam supponit." An instructive parallel is *Metaph.* 1038 a 5 εἰ οὖν τὸ γένος ἀπλῶς μὴ ἔστι παρὰ τὰ ὡς γένους εἶδη, ἡ εἰ ἔστι μὲν ὡς ὕλη δ' ἐστὶν (ἡ μὲν γὰρ φωνὴ γένος καὶ ὕλη, αἱ δὲ διαφοραὶ τὰ εἶδη καὶ τὰ στοιχεῖα ἐκ ταύτης ποιοῦσιν). The coalescence of genus and last differentia in the definition is parallel to the union of matter and form in the particular. For γένος ὡς ὕλη, cf. 1024 b 8, 1043 b 10, 1058 a 23 sq.: perhaps also *De A.* 417 a 27.

b 8. ὁμοίως δὲ κἀν...κατηγοροῦτο. This appears to mean that whatever difficulty is raised by the genus animal or the genus soul attaches similarly to any common predicate or universal [καθόλου=καθ' ὅλου κατηγορούμενον], e.g. to body (cf. *Metaph.* 1069 a 25—30. I cite (a 26) οἱ μὲν οὖν νῦν τὰ καθόλου οὐσίας μᾶλλον τιθέασιν· οἱ δὲ γὰρ γένη καθόλου, ἃ φασιν ἀρχὰς καὶ οὐσίας εἶναι μᾶλλον διὰ τὸ λογικῶς ζητεῖν· οἱ δὲ πάλαι τὰ καθ' ἕκαστον, οἷον πῦρ καὶ γῆν, ἀλλ' οὐ τὸ κοινὸν σῶμα): or to geometrical figure, σχῆμα. In the parallel passage (414 b 22—28) what A. says is that "in the case of kinds of soul as in that of geometrical figures, the only general notion which will fit all is one which is not proper to any particular kind of soul or any particular figure, and that it is absurd to look for a general notion in these as in other cases without investigating the *infimae species*" (see Innes, *Class. Rev.* xvi. 462). Cf. *Metaph.* 1038 b 11 τὸ δὲ καθόλου κοινόν. τοῦτο γὰρ λέγεται καθόλου, δὲ πλείοσιν ὑπάρχειν πέφυκεν. τίνος οὖν οὐσία τοῦτ' ἔσται, ἡ γὰρ ἀπάντων ἡ οὐδενός. ἀπάντων δ' οὐχ οἷόν τε κτέ.

**402 b 9—16.** Further, if instead of a plurality of souls, we recognise a plurality of parts of a single soul, we have to decide whether our study should begin with the whole soul or with the parts, and how these parts are severally distinct; whether the study of the parts should be preceded by a study of their functions [§ 6]; and, if so, whether we should begin with an examination of the objects with which the several faculties and their functions are respectively concerned [§ 7].

**b 9.** *ἔτι δ' εἰ μὴ...ἀλλὰ μόρια.* We return to the fourth problem *πότερον ὁμοειδὴς ἅπανα ψυχὴ ἢ οὐ*. The intervening passage (402 b 2 *εἰ δὲ μὴ ὁμοειδὴς... 8 κατηγοροῦτο*) has traced the consequences of assuming the negative, *μὴ ὁμοειδὴς ἅπανα ψυχὴ*, or, which is the same thing, of assuming a variety of kinds of soul (*πολλὰι ψυχαὶ καὶ ἀνομοειδεῖς*). The alternative now taken is to assume a variety of parts (*πολλὰ μόρια*) in the one kind of soul: cf. 413 b 13 *πότερον δὲ τούτων ἕκαστόν ἐστι ψυχὴ ἢ μόριον ψυχῆς κτέ.*, *Simpl.* 13, 27 *Εἰ μὴ πολλὰι ψυχαί, φησιν, τούτεστιν εἰ μὴ κατ' εἶδος ἀλλήλων διαφέρειεν αἱ τε ἐν τοῖς διαφόροις καὶ ἐν ἐνὶ τῷ ἀνθρώπῳ, ἀλλὰ μόρια τὸ διάφορον οὐ κατ' εἶδος ἔχοντα διὰ τὸ ἐνὸς εἶναι μόρια, ἀλλὰ κατὰ λόγους, ὥς τὸ κοῦφον καὶ φωτιστικὸν τοῦ πυρός. τοῦτο δὲ ἐπὶ μὲν ἐνὸς ζῴου εἴτε ἀνθρώπου εἴτε τινὸς ἄλλου ἀληθές, ἵνα μία ἡ ἐνὸς ἐκάστου ἡ ψυχὴ. εἴτε οὖν μόρια εἴτε δυνάμεις τὰς πολλὰς ἐν ἐκάστῳ λεκτέον ζῳάς, ὁμοειδεῖς μὲν κατὰ λόγον δὲ διαφερούσας ῥήτεον.* The unity of each particular soul is safeguarded, but the diversity between soul and soul is attributed to a plurality of parts which may or may not all be found in any two diverse particular souls selected for comparison. Them. (4, 12 H., 7, 2 Sp.) confines his attention to the individual, citing Pl. *Theaet.* 184 D for the absurdity that each of us carries several souls as it were in a Trojan horse: *ἄρα πολλὰς θετέον ψυχὰς ὑπάρχειν τῷ ζῳῷ οἷον φυτικὴν θρεπτικὴν ὀρεκτικὴν διανοητικὴν, ἐφ' ὧν καὶ αὗται (quae quidem animalia has quoque habent), ἡ πολλὰι μὲν οὐκ εἰσὶν ἐν ἐκάστῳ ψυχαί...μῖα δὲ ὅλης αὐτῆς ὑπαρχούσης τὰ μόρια διενήνοχε.*

**b 10** *χαλεπὸν...ἱ ἀλλήλων.* *Τούτων=τῶν μορίων.* Them. (4, 17 H., 7, 9 Sp.) *καὶ εἰ μῖα θετέον μέρη, χαλεπὸν τὸ διορίσαι, ποῖα καὶ πῶς· οἷον εὐθύς, ἂρ' ἕτερον τὸ θρεπτικὸν τοῦ αἰσθητικοῦ καὶ ἄμφω τοῦ γεννητικοῦ, ἡ τῷ λόγῳ μὲν ἕτερα, τῷ δ' ὑποκειμένῳ ταῦτά;* The limits between thought and imagination or sense and intellect are hard to determine, and A.'s predecessors did not recognise all parts of the soul.

**b 15** *τὰ ἀντικείμενα.* Cf. 415 a 20. The examples given—*τὸ αἰσθητόν, τὸ νοητόν*—explain the meaning clearly. When we perceive by sense or think, we perceive something and think something, viz. the sensible object or the object of thought, but why these objects are said to be *ἀντικείμενα* is not so clear: Bonitz associates this application of the term with the local sense by which one thing is said to be over against or opposite to another, *Ind. Ar.* 64 a 15 *sensu locali*, *De Cael.* I. 8, 277 a 23 *ἡ κύκλῳ [sc. φορά] ἔχει πῶς ἀντικείμενα τὰ κατὰ διάμετρον* ["circular motion virtually has opposite limits in the two extremities of the diameter of the circle" i.e. the circle travels from one end *A* of the diameter to the other end *B*, and back again]: *ib.* II. 2, 284 b 21 sq. *τὸ πρὸςθεν καὶ τὸ ἀντικείμενον* (cp. b 32 *ὅπισθεν*). *Ad hunc usum v. ἀντικεῖσθαι referendū videtur, quod res sensibus obiectae ἀντικείμενα nominantur De A.* 402 b 15, *ib.* 415 a 20. At first this seems simpler than the old explanation which refers the term to the opposition of relatives, Them. (4, 36 H., 8, 7 Sp.) *καὶ γὰρ ἀντίκειται ὡς τὰ πρὸς τι τὸ μὲν νοητὸν πρὸς τὸν νοῦν, τὸ δὲ αἰσθητὸν πρὸς τὴν αἴσθησιν.* *Philop.* 39, 36; *Simpl.* 14, 17—21. This is one of the four subdivisions of logical opposition or contrast as laid down in *Cat.* 10. 11 b 17: *λέγεται δὲ ἕτερον ἐτέρῳ ἀντικεῖσθαι τετραχῶς, ἡ (1) ὡς τὰ πρὸς τι, ἡ (2) ὡς τὰ ἐναντία, ἡ (3) ὡς στέρησις*

καὶ ἔξις, ἥ (4) ὡς κατάφασις καὶ ἀπόφασις [cf. *Metaφh.* 1018 a 20 sq.]. ... ὅσα μὲν οὖν ὡς τὰ πρὸς τι ἀντίκειται, αὐτὰ ἅπερ ἐστὶ τῶν ἀντικειμένων λέγεται ἢ ὁπωσοῦν ἄλλως, πρὸς αὐτά, οἷον τὸ διπλάσιον, αὐτὸ ὅπερ ἐστίν, ἐτέρου διπλάσιον λέγεται· τινὸς γὰρ διπλάσιον. καὶ ἡ ἐπιστήμη δὲ τῷ ἐπιστητῷ ὡς τὰ πρὸς τι ἀντίκειται, καὶ λέγεται γε ἡ ἐπιστήμη αὐτὸ ὅπερ ἐστὶ τοῦ ἐπιστητοῦ. καὶ τὸ ἐπιστητὸν δὲ αὐτὸ ὅπερ ἐστὶ πρὸς τὸ ἀντικείμενον λέγεται, τὴν ἐπιστήμην· τὸ γὰρ ἐπιστητὸν τινὶ λέγεται ἐπιστητὸν, τῇ ἐπιστήμῃ. As Trend. remarks, (p. 168) if ἀντικείμενον here bears its technical meaning, it can only denote the opposition between relative terms: hoc loco sola τὰ πρὸς τι conveniunt. Nam quae percipiuntur, quae cogitantur, ad perceptionem et cogitationem duplici modo pertinent, ut haec tum ab illis moveantur, tum ad ea regantur. Quo pertinet locus categoriarum 10. 11 b 24 ὅσα μὲν οὖν τῇ ἐπιστήμῃ [cited above]. Quo quidem oppositorum genere quod res est non tollitur sed servatur. In eo enim, quod scitur, sciendi notio manet. But in ἐναντιότης and στέρσις the presence of one opposite implies the absence or destruction of the other. Whatever the precise explanation, it is clear that ἀντικείμενον = the object of a mental operation, the external thing to which we are attending. We shall presently find ὑποκείμενον used in the same way for the object of perception, e.g. 422 b 32, 426 b 8, 10. Thus colour is the "subject-matter," the peculiar province, of sight, sound of hearing. Plato in the *Republic* (511 D, E) had described the faculties as set over against (ἐπὶ) things sensible and things intelligible respectively.

b 15. πρότερα τούτων, sc. τῶν ἔργων. This we should naturally expect, because τὰ ἔργα have just been mentioned. Further in 415 a 20 the same question is proposed and solved, where τούτων is clearly the operations τὸ νοεῖν καὶ τὸ αἰσθάνεσθαι. So the commentators. Them. (4, 32 H., 8, 2 Sp.) καὶ εἰ περὶ τῶν ἐνεργειῶν, ἄρα περὶ αὐτῶν πρότερον ἢ περὶ τῶν ὑποκειμένων ταῖς ἐνεργείαις; Simpl. 14, 17—24, Philop. 39, 35 sqq. Philop. remarks that A. ought to have written in b 16 τὸ αἰσθητὸν τῆς αἰσθήσεως καὶ τὸ νοητὸν τῆς νοήσεως. But if it is once settled that the operation of sense-perception (as better known) is to be studied before the faculty, if we further determine to study the sensible object before the operation, plainly the sensible object will be studied before the faculty. And as the ultimate aim is to arrive at knowledge of the obscure (part or) faculty, it is natural enough to speak of the study of the sensible object as preliminary to this.

**402 b 16—403 a 2.** It would seem that, while the determination of the essence or What is of use, as in geometry, for the study of the essential properties which follow from it, at the same time the study of these essential properties also materially contributes to the knowledge of what a thing really is. In fact, when we are in a position to give an account of all or most of the properties as they are confusedly and imperfectly presented to us, we shall best be able to define what a thing really is, such a definition forming the starting-point of all demonstration. Hence definitions which lead to no information about attributes are of use for dialectical purposes only and have no scientific value [§ 8].

b 16. εἴκει δ' κτέ. This section deals generally with the logic of science conceived as an instrument of discovery, in particular with the relative importance of a study of essence and a study of properties, the two co-ordinate parts of the enquiry proposed (402 a 7 sq.). The series of problems (a 23 to b 16) is nearly complete. Only one remains (403 a 3 sqq.) ἀπορίαν δ' ἔχει κτέ. They have all been propounded with perfect impartiality, no clue being vouchsafed as to a future decision; but the alternatives presented in the last section (b 9—16) suggest the possibility that we may have to proceed indirectly

*a posteriori* by reasoning from the effect to the cause, and studying the properties in order to obtain a definition of the essence. Accordingly A. faces this possibility and justifies the procedure in question. The fields of enquiry are diverse. Sciences like geometry deduce properties from definitions, elsewhere the study of the properties precedes and contributes to the discovery of the definition. In any case, the possibility of deducing properties serves as a test of a scientific definition. See *note* on b 26. Cf. *Metaφh.* 1035 b 16 *ἐκαστον γοῦν τὸ μέρος ἐὰν ὀρίζηται καλῶς, οὐκ ἄνευ τοῦ ἔργου ὀριεῖται, δ' οὐχ ὑπάρξει ἄνευ αἰσθήσεως.*

b 17. *τὸ τί ἐστι γνῶναι.* Knowledge of the "What" is knowledge of the essence, (a 7) *τὴν τε φύσιν καὶ τὴν οὐσίαν*, (a 13) *τὴν οὐσίαν καὶ τὸ τί ἐστι*, and is expressed in a definition. This becomes a principle or premiss of demonstration (b 25), and from such principles science deduces the essential properties δι' ἀποδείξεως.

b 17. *θεωρῆσαι τὰς αἰτίας.* Science is the knowledge of causes, *Anal. Post.* I. 2, 71 b 9—16, b 30 sq., I. 6, 75 a 31—37, I. 14, 79 a 23 sq. The conclusions of a particular science must be demonstrated, i.e. the facts they state must be shown to follow from premisses better known and causally connected with the first principles of the science (*ib.* I. 2, 71 b 17 sq.), the middle term in all such syllogisms denoting the cause of the effect stated in the conclusion. Leaving on one side such conclusions as are merely accidental and depend upon extraneous causes, the rest are the essential properties of the peculiar province (*γένος*) of the given science, and ought therefore to admit of being demonstrated syllogistically from the first principles of that science upon which remotely or proximately they depend.

b 18. *τῶν συμβεβηκότων ταῖς οὐσίαις*, here as below b 21, 23, 26, the essential properties of things as explained above a 8 and a 15. Them. (5, 4 H., 8, 13 Sp.) *θεωρῆσαι τὰ καθ' αὐτὰ συμβεβηκότα τῷ πράγματι.* Simpl. 14, 30 *τὰ καθ' αὐτὰ συμβεβηκότα θεωρεῖν ταῖς οὐσίαις.* Philop. 40, 12 *γνῶναι τὰ οὐσιωδῶς ὑπάρχοντα τοῖς πράγμασιν... 20 ἢ γνῶσις τῶν καθ' αὐτὰ καὶ πρῶτως ὑπαρχόντων τοῖς πράγμασι. ταῦτα γὰρ φησι συμβεβηκότα ἐνταῦθα.* The plural seems to show that *οὐσίαις* means the things with which the science deals and not essences as opposed to properties. Thus unit is *οὐσία ἄθερος* and point is *οὐσία θερός*, *Anal. Post.* I. 27, 87 a 35 sq.

b 18. *ἐν τοῖς μαθήμασι.* These definitions of "straight"—"curved"—"line"—and "surface"—illustrate what A. means by the fundamental principles of Plane Geometry (a 22 *ἀρχαὶ ἐπιπέδων*). Similarly the proposition that the angles of a triangle are together equal to two right angles (Eucl. I. 32) excellently illustrates what is meant by a property (*συμβεβηκός*) to be deduced δι' ἀποδείξεως: *Anal. Post.* I. 4, 73 b 30—74 a 3, I. 5, 74 a 25—b 4.

b 21. *τὰ συμβεβηκότα συμβάλλεται.* The properties contribute to the knowledge of the essence: exactly how A. does not state, for (b 22) *ἐπειδὴν γὰρ... 25 κάλλιστα* is just as vague. It is presumed that we are acquainted with certain properties of a thing which we have still to define. Our knowledge of these properties cannot at this stage be scientific. Them. (5, 9 H., 8, 21 Sp.) *ἀδύνατον γὰρ ἄνευ τοῦ γνώριμον γενέσθαι τὸν ὁρισμὸν θηρεῦσαι τι τῶν ὑπαρχόντων δι' ἀποδείξεως.* Cf. Philop. 43, 3 *πῶς γὰρ ἐγγχωρεῖ ἀποδεικτικῶς εἰδέναι τίνα ἐστὶ τὰ ὑπάρχοντα κατ' οὐσίαν τῷ πράγματι τὸν μὴ τὴν οὐσίαν αὐτοῦ ἐγνωκότα;* This statement is fully borne out by *Anal. Post.* I. 6, I. 31 and emphasized below (b 25) *πάσης γὰρ ἀποδείξεως κτέ.* It would seem, therefore, that in such cases the properties are better known to us, and we become acquainted with them, by sensation and experience before we know that they are deducible from the

definition of the thing ; the method pursued throughout Book II. of the present treatise exemplifies this. Philop. 40, 30—41, 6 adduces from the *Physics* the definitions of τόπος, ἄπειρον, κενόν, χρόνος and that of hail from *Meteor.* I. 12, 347 b 34 sqq. as obtained in this way. μέγα μέρος. So *De Sensu* I, 437 a 11 πλείστον συμβάλλεται μέρος. Cf. the Latin *maiores partem*.

b 23. κατὰ τὴν φαντασίαν. *Ind. Ar.* 811 a 59 : i.e. κατὰ τοῦτο ὃ φαίνεται ἡμῖν. This meaning must not be confused, as Trend. appears to confuse it, with that which the term bears when used technically for imagination, whether operation or result. As Bonitz explains, s.v. : verbo φαίνεσθαι rei obiectae species significatur, quatenus sensu animo percipitur ; ex hac duplici vocabuli φαίνεσθαι notione explicatur, quod descendens inde verbum φαντάζεσθαι ac nomen φαντασία modo speciem rei obiectae significat sive veram sive fallacem, i.q. τὸ φαίνεσθαι, modo eam actionem, qua rerum imagines animo informamus. For the meaning "appearance to sense" or simple presentation, whether true or false, cf. *De A.* 428 b 3 φαίνεται μὲν ὁ ἥλιος ποδιαῖος, πεπίστευται δ' εἶναι μείζων τῆς οἰκουμένης with the parallel *De Insomni.* 2, 460 b 18 φαίνεται μὲν ὁ ἥλιος ποδιαῖος, ἀντίφσει δὲ πολλάκις ἕτερόν τι πρὸς τὴν φαντασίαν ; *De Caelo* II. 13, 294 a 7, *De Sensu* 3, 439 b 6 ὥρισταί ἡ φαντασία τῆς χροῆς, "the colour produces a definite impression." Here (402 b 23) it is used of appearance to the mind, de rebus cogitatis Bz, as in *Eth. Nic.* 1114 a 31 sq. πάντες ἐφίενται τοῦ φαινόμενου ἀγαθοῦ, τῆς δὲ φαντασίας οὐ κύριοι (i.e. οὐκ εἰσὶ κύριοι τοῦ φαίνεσθαι τι ἀγαθόν), where φαντασία is used as the verbal of φαίνεσθαι in the sense of the presentation or appearance to the mind. Especially in the phrase ἐμποιεῖν φαντασίαν = to produce an appearance or impression there is an approximation to the technical term imagination : *Ind. Ar.* 811 b 7 ex ipsa formula ἐμποιεῖν φαντασίαν apparet, quam prope coniunctus hic usus sit cum eo qui infra proponitur. *Metaph.* 1024 b 17 πρᾶγμα ψεῦδος [λέγεται] καὶ τούτου τὸ μὲν τῷ μὴ συγκείσθαι ἢ ἀδύνατον εἶναι συντεθῆναι... οὕτω γὰρ οὐκ ὄντα ταῦτα. τὰ δὲ ὅσα ἐστὶ μὲν ὄντα, πέφυκε μέντοι φαίνεσθαι ἢ μὴ οἶά ἐστιν ἢ ἀ μὴ ἐστιν, οἷον ἡ σκιαγραφία καὶ τὰ ἐνύπνια· ταῦτα γὰρ ἐστὶ μὲν τι, ἀλλ' οὐχ ὧν ἐμποιεῖ τὴν φαντασίαν [the things exist, but not as they are presented ; they produce or convey a false impression]. πράγματα μὲν οὖν ψευδῇ οὕτω λέγεται, ἢ τῷ μὴ εἶναι αὐτὰ, ἢ τῷ τὴν ἀπ' αὐτῶν φαντασίαν μὴ ὄντος εἶναι : 1025 a 5 τὰ πράγματά φαμεν ψευδῇ εἶναι, ὅσα ἐμποιεῖ φαντασίαν ψευδῇ. So also in the *Torics*, e.g. I. 1, 100 b 26 οὐθὲν τῶν λεγομένων ἐνδόξων ἐπιπόλαιον ἔχει παντελῶς τὴν φαντασίαν (i.e. εὐθὺς φαίνεται ψευδές) : *ib.* IX. 4, 165 b 25, IX. 6, 168 b 29. In our present passage there is no suggestion that the presentment of the συμβεβηκότα is erroneous. It may, however, be imperfect or confused, if we compare it with the knowledge of the same συμβεβηκότα obtained by demonstration (δι' ἀποδείξεως). Until deduced from the definition of the essence the properties can never be known as necessary. In the enquiry concerning soul the operations are συμβεβηκότα, effects presumably demonstrable from the essence or definition if we knew it. But with these operations we are to a certain extent familiar, whereas we are still in search of the definition from which they ought to be demonstrable. Trend. denies that the properties can in this way be known in the full sense of the term : Restat igitur, ut συμβεβηκότα, donec a sensibus suscipiuntur neque a principiis demonstrantur, φαντασία tribuantur ; nondum enim cognita sunt. Cf. *Simpl.* 15, 1 ὧν [τῶν καθ' αὐτὰ συμβεβηκότων] καὶ ἡ αἴσθησις καὶ ἡ φαντασία ἀντιληπτική, *Them.* (5, 10 H., 8, 23 Sp.) ἀλλ' ἱκανὸν καὶ τὸ φαινόμενον καὶ ἡ φαντασία [sc. οὐ δι' ἀποδείξεως], *Philop.* 42, 6 φαντασίαν φησὶ ἦτοι ὁλοσχρέστερον γινώσιν ἥγουν τὰ φαινόμενα καὶ ἐναργῆ, φαντασία καλέσας παρὰ τὸ φανερά εἶναι. φαντασία seems to be used in the latter sense in *Phys.* IV. 4, 211 b 34.

To sum up. The fundamental meaning in *φαντασία* is presentation to the mind, first in the act of perception and afterwards when by the faculty of imagination in the technical sense this appearance is recalled and again presented to the mind. In modern psychology the distinction between the two is marked by the two terms presentation and representation, and A.'s technical *φαντασία* or τὸ φανταστικόν is what would be called a representative faculty, though loosely used, as A. includes among its effects the production of the after-image. Etymologically the earlier meaning of *φαντασία*, as of φαίνεσθαι, is presentation or appearance and this, its normal sense in Plato and earlier writers, is often retained by A., as here. See further note on 404 a 28.

b 23. ἀποδιδόναι. *Ind. Ar.* 80 a 54 ἀποδιδόναι sequente enunciazione interrogativa syn ὀρίζειν: cf. 406 a 27, *Eth. Nic.* 1095 a 20 περὶ δὲ τῆς εὐδαιμονίας, τί ἐστίν, ἀμφισβητοῦσιν καὶ οὐχ ὁμοίως οἱ πολλοὶ τοῖς σοφοῖς ἀποδιδόασιν. For the construction ἀποδιδόναι περὶ τινος without the dependent question Bz. cites *De Gen. et Corr.* II. 6, 333 b 4, *Meteor.* I. 1, 339 a 7, *Tor.* I. 14, 105 b 26 ὁρισμῷ οὐκ εὐπετὲς ἀποδοῦναι περὶ αὐτῶν.

b 25. πάσης γὰρ ἀποδείξεως. *Metaph.* 1034 a 31 ἐν τοῖς συλλογισμοῖς πάντων ἀρχὴ ἡ οὐσία. ἐκ γὰρ τοῦ τί ἐστίν οἱ συλλογισμοὶ εἰσιν. *Simpl.* 15, 9 regards this as a reason given for trying to discover the definition: "We must after all find a definition, for without it we are unable to demonstrate any of the properties." Similarly *Philop.* 42, 15 sqq. τοῦτο δηλῶν ὅτι εἰ καὶ ἐκ τῆς ἐναργείας ἔχομεν τινα γνῶσιν τῶν συμβεβηκότων ταῖς οὐσίαις, ἀλλὰ ταύτην τὴν γνῶσιν ἔχομεν ἐξ αἰσθήσεως καὶ οὐκ ἀποδεικτικῇ. ἐὰν δὲ τὸν ὁρισμὸν γνῶμεν, τότε ἐπιστημονικῶς δυνάμεθα τὴν γνῶσιν αὐτῶν εἶναι ἀρχαῖς κεκρημένοι τοῖς ὁρισμοῖς. This was the view of Alex. *Aphr.* apud *Philop.* 43, 1—8. On the general notion as an ἀρχὴ cf. Maier, *Syllogistik*, II a, p. 404, n. 2, who has valuable remarks on the synthetic and analytic processes of thought.

b 26 ὥστε...403 a 2 ἅπαντες. From the scientific definition all essential properties can be deduced. Hence we are furnished with a test of a good definition. A. applies this to previous definitions of the soul, 408 a 3—5, 409 b 14—18; cf. Grote, *Aristotle*, p. 452, 2nd edition (*Vol.* II. p. 179, 1st edition): "Aristotle rejects all the theories proposed by antecedent philosophers...he pronounces it incorrect to say that the soul is moved at all. He farther observes that none of the philosophers have kept in view either the full meaning or all the varieties of soul: and that none of these defective theories suffices for the purpose that every good and sufficient theory ought to serve, viz. not merely to define the essence of the soul, but also to define it in such a manner that the concomitant functions and affections of the soul shall all be deducible from it."

403 a 2. διαλεκτικῶς. *Philop.* 44, 1 οὐ φυσικὸν ἀλλ' ἀπλῶς πρὸς δόξαν ὁρῶντα καὶ τὸ δοκεῖν τι λέγειν. A definition would be sufficient for the purposes of debate if it were accepted as valid by the interlocutor. A. opposes dialectic to demonstrative science (see *Topics*, passim); the two agree in employing the syllogism and arguing strictly from premisses to conclusion. But the premisses of dialectic are not necessarily or invariably true, they may include any current opinions (ἔνδοξα) which both the disputants agree to accept. Cf. *Metaph.* 995 b 23 περὶ ὧν οἱ διαλεκτικοὶ πειρῶνται σκοπεῖν ἐκ τῶν ἐνδόξων μόνον ποιούμενοι τὴν σκέψιν. *Philop.* 44, 2—11 compares the dialectician's definition of anger given below, a 30 sqq., viz. ὁρεξὶς ἀντιλυπῆσεως, with the physicist's ζέσις τοῦ περικαρδίου αἵματος δι' ὁρεξίν ἀντιλυπῆσεως. The former fails to explain the accompanying symptoms (τὰ παρακολουθοῦντα πάθη), palpitation (παλμός), rise of temperature (θερμότης) and a flushed face. When the abstract logical consideration of a subject is censured and a preference is expressed for physical

enquiry into things in the concrete, A.'s complaint comes to this, that the premisses with which the reasoning starts are not appropriate and the conclusions do not apply to the facts, *De Gen. An.* II. 8, 748 a 8 οἱ γὰρ μὴ ἐκ τῶν οἰκείων ἀρχῶν λόγοι κενοί, ἀλλὰ δοκοῦσιν εἶναι τῶν πραγμάτων οὐκ ὄντες. Yet such formal, superficial discussion, λογικῶς ζητεῖν, has its place and A. is content to employ it, e.g. *Metaφh.* 1029 b 13.

a 2. κενῶς. Simpl. 15, 22 ὡς τῆς φύσεως καὶ τοῦ βάθους τῶν ὄντων ἀποπίπτον κενὸν προσαγορεύει: Philop. 43, 34 τούτέστι κατὰ κενοῦ φέρεσθαι καὶ μὴ ἐφάπτεσθαι τῆς φύσεως τοῦ πράγματος, μηδὲ οἰοεὶ ἀπερείδειν τῷ πράγματι τὴν πέζαν τῆς διανοίας, ἀλλὰ μετέωρον εἶναι. Cf. *Eth. Eud.* I. 8, 1217 b 21 λογικῶς καὶ κενῶς, *De Gen. An.* II. 8, 748 a 8 καθόλου λίαν καὶ κενός, *Eth. Nic.* 1096 b 20 μάταιον ἔσται τὸ εἶδος, *Pol.* 1260 a 25 καθόλου γὰρ οἱ λέγοντες ἐξαπατῶσιν ἑαυτοὺς.

**403 a 3—10.** As regards the attributes or affections of the soul, there is the important and difficult problem, whether they are all shared with the body or whether the soul has any affection peculiar to itself. The dependence of the soul upon the body is apparent in most of its functions, whether active or passive, e.g. in anger, desire, sensation. Thinking would seem to form an exception, though if it be a species of imagination, or not independent of imagination, even thought would be dependent upon the body [§ 9].

a 3. ἀπορίαν δ' ἔχει. The remainder of this chapter is devoted to the last problem, viz., Are there any properties of soul which are independent of body? Its discussion leads to a digression on the subject-matter of various branches of science, from which A. returns in the concluding sentence, b 16—19. πότερόν ... 4 κοινά. This is best understood if we revert to 402 a 9 sq., where the distinction drawn must be the same, though the order of the alternatives is reversed. Consequently the attributes or properties here said to be shared by the possessor of the soul are those referred to in the earlier passage as belonging to the animal in virtue of the soul (δι' ἐκείνην), i.e. belonging to the animal as a whole because it is animate (ἔμψυχον). Such attributes or properties are distinguished from those that are peculiar to the soul itself and not shared by the body which it animates. As in *Metaφh.* 1038 b 10 sqq., ἴδιον = ὁ οὐχ ὑπάρχει ἄλλῳ, κοινόν = ὁ πλείοσιν ὑπάρχειν πέφυκεν.

a 4. τοῦ ἔχοντος. By this we must understand τοῦ ζῴου = τοῦ ἐμψύχου σώματος. The two phrases τὸ ζῶον ἔχει ψυχὴν and τῷ ζῴῳ ὑπάρχει ψυχὴ are equivalent, cf. *Metaφh.* 1040 b 23 οὐδενὶ γὰρ ὑπάρχει ἡ οὐσία ἀλλ' ἡ αὐτῇ τε καὶ τῷ ἔχοντι αὐτήν, οὗ ἔστιν οὐσία. The soul is not the οὐσία of an inanimate or of a dead body, 412 b 25 sq., but of a living body, 415 b 8 τοῦ ζῶντος σώματος αἰτία καὶ ἀρχή, b 11 τῶν ἐμψύχων σωμάτων ἡ ψυχὴ αἰτία. So 412 a 15 μετέχον ζωῆς = ἐμψυχον. Parallels may be cited for τοῦ ἔχοντος, e.g. 416 b 18, 21 τὸ μὲν τρέφον ἔστιν ἡ πρώτη ψυχὴ, τὸ δὲ τρεφόμενον τὸ ἔχον ταύτην σῶμα (i.e. τὸ ἐμψυχον σῶμα ἢ ἐμψυχον, *ib.* b 9 sqq., b 11), 428 b 17 and 408 b 26 sq. τοῦδὲ τοῦ ἔχοντος ἐκείνο, ἢ ἐκείνο ἔχει (cf. 408 b 28 τοῦ κοινοῦ, ὃ ἀπόλωλεν). As the whole body is animate by the presence of soul, so also is any part of it: cf. *Metaφh.* 1036 b 30—32. See note on 422 b 23, ἐντός: also *De Part. An.* II. 1, 647 a 24—31 where, a 27, we read τὸ ἔχον πρῶτον μόνιον τὰς τοιαύτας ἀρχάς (viz. τὴν αἰσθητικὴν καὶ τὴν κατὰ τόπον κινητικὴν). In *De Mem.* I. 450 a 30 τὸ γινόμενον διὰ τῆς αἰσθήσεως ἐν τῇ ψυχῇ καὶ τῷ μορίῳ τοῦ σώματος τῷ ἔχοντι αὐτήν the last word αὐτήν may possibly replace αἰσθήσιν, but, as the heart or its analogue is the bodily part in question, a comparison of *Metaφh.* 1035 b 25 sq. would suggest that τῷ ἔχοντι αὐτήν [int. τὴν αἰσθητικὴν ψυχὴν] corresponds to ἐν τῷ πρώτῳ ὁ λόγος καὶ ἡ οὐσία, or, in other words, ἡ ψυχὴ.

a 5. φαίνεται δὲ, sc. ἡ ψυχὴ. φαίνεται evidentiam significat, non dubitationem.



The appeal is to experience, to the facts, especially the evidence of sense. Cf. 404 b 5, 406 b 24 with the infinitive, as 406 a 30, 407 a 15 with the participle, *εἰ σαιφε*. So also *φανερὸν ἐστίν*.

a 6. *πάσχειν οὐδὲ ποιεῖν*. The soul has no passive affection or active function, i.e. no passive or active property of its own (*ἴδιον*). Cf. a 10 sq. *ἐργῶν ἢ παθημάτων*, 409 b 15 *τὰ πάθη καὶ ἰτὰ ἔργα τῆς ψυχῆς*, 411 b 2 *τῶν ἄλλων ἕκαστον ποιούμεν τε καὶ πάσχομεν*. That the reference to a subject is the more correct mode of expression follows from 408 b 13—15.

a 7. *ὅλως αἰσθάνεσθαι*. Cf. *De Sensu* I. 436 a 7 *κοινὰ τῆς ψυχῆς ὄντα καὶ τοῦ σώματος, οἷον αἴσθησις καὶ μνήμη καὶ θυμὸς καὶ ἐπιθυμία καὶ ὅλως ὄρεξις, καὶ πρὸς τοῦτοις ἡδονή τε καὶ λύπη*. A. sums up his own view of sensation thus, *De Sensu* I. 436 b 6 *ἢ δ' αἴσθησις ὅτι διὰ σώματος γίνεταί τῇ ψυχῇ, δῆλον*. Apparently anger and courage, as well as desire, are referred to the sensitive soul, *τὸ αἰσθητικόν*. In Plato, e.g. *Tim.* 69 D, 77 B (cf. 42 A), there is an attempt to distinguish two uses of the word *αἴσθησις*, which in Greek had to do duty for the feeling of pleasure or pain as well as for the cognitive element of sensation proper. As Professor Beare points out (*Greek Theories of Elementary Cognition*, pp. 270, n. 3, 273, n. 3) there was an analogous double use of the English word 'feeling.' In psychological works of the last century feeling had to do duty for the sense of pleasure and pain as well as for the factor of cognition. *ὅλως* (*Ind. Ar.* 505 b 47) ab enumeratis singulis rebus transitum parat ad universum genus. Cf. 429 b 21, 431 b 10 and 436 a 9 quoted above.

a 8. *μάλιστα*. Join with *ἴδιον*. καὶ τοῦτο, sc. *τὸ νοεῖν*. So in a 9 *οὐδὲ τοῦτο. φαντασία τις*. A species of imagination. The term is here used in its technical sense, and not as in 402 b 23. See III., c. 3 and 433 a 9 *εἴ τις τὴν φαντασίαν τιθεῖ ὡς νόησιν τινα*.

a 9. *ἢ μὴ ἄνευ φαντασίας*. This more closely approximates to the results obtained in III., cc. 4—8, especially 431 a 14 sq., 16 sq., 431 b 2, 4—8, 432 a 8 sq., 13 sq., *De Mem.* I. 449 b 30 sq. *οὐκ ἐνδέχουτ' ἄν κτέ.* because *φαντασία* in the technical sense implies antecedent sensation and therefore body. Cf. 427 b 15 *αὐτῇ τε* [sc. *ἢ φαντασία*] *οὐ γίνεταί ἄνευ αἰσθήσεως*, 429 a 1 *ἢ φαντασία ἂν εἴη κίνησις ὑπὸ τῆς αἰσθήσεως τῆς κατ' ἐνέργειαν γιγνομένη*, 425 b 24 *ἀπελθόντων τῶν αἰσθητῶν ἔνεσιν αἱ αἰσθήσεις καὶ φαντασίαι ἐν τοῖς αἰσθητήριοις*, *Rhet.* 1370 a 28 sqq., *De Mem.* I. 450 a 27—32. Memory is the revival of this mental picture, and of memory A. says *δῆλον γὰρ ὅτι δεῖ νοῆσαι τοιοῦτον τὸ γιγνόμενον διὰ τῆς αἰσθήσεως ἐν τῇ ψυχῇ καὶ τῷ μορίῳ τοῦ σώματος τῷ ἔχοντι αὐτήν, οἷον ζωγράφημα τι τὸ πάθος, οὗ φαιμέν τὴν ἔξιν μνήμην εἶναι· ἢ γὰρ γιγνομένη κίνησις* [i.e. *φαντασία*] *ἐνσημαίνεται οἷον τύπον τινὰ τοῦ αἰσθήματος, καθάπερ οἱ σφραγιζόμενοι τοῖς δακτυλίοις*. The optative with *ἂν* expresses the logical consequence, as often, e.g. 403 a 11, 12, 406 b 4, where it follows 406 a 31 *εὐλογον*, and 32 *εἰπεῖν ἀληθές*.

**403 a 10—27.** This involves the further question of the soul's separate existence. If there is any activity or affection of the soul in which the body does not share, its separate existence will be possible: if not, it will not be separable from the body. In the latter case its mode of existence is comparable to that of the straight line, which has many properties, *quid* straight, but is never found apart from something corporeal on which its existence depends. Experience confirms the view that most attributes of the soul are similarly dependent upon the body, as the necessary condition of their existence, and this is shown quite clearly by such emotions as anger or fear. It follows from this that they are forms or notions immersed in matter, i.e. the matter is a necessary condition of their essence, and this dependence upon matter is seen when they come to be defined [§ 10].

a 11. ἴδιον, sc. τῆς ψυχῆς (so a 12 ἴδιον αὐτῆς), i.e. not shared by the body, μὴ κοινὸν καὶ τοῦ ἔχοντος. χωρῖς εἶναι, as in 413 b 26; cf. 403 a 12 οὐκ ἂν εἴη χωριστή. This terminology is regularly employed to indicate separate or independent existence.

a 12. οὐκ ἂν εἴη χωριστή. If there is no property or function of the soul that is not shared by the body, the soul will not have a separate or independent existence. A decision in this sense excludes the possibility which the other alternative leaves open. ἀλλὰ καθάπερ τῷ εὐθεῖ. *Ind. Ar.* 354 a 26 omittitur etiam aliquoties ea enunciatio demonstrativa, ad quam enunciatio a καθάπερ [vel ὥσπερ] incipiens referatur, cf. *Probl.* III. 17, 873 b 20 (on *De A.* 409 a 32 and 431 a 17, ὥσπερ with no οὕτως apparent, see *notes* ad loc.). Something must be supplied, e.g. περὶ τὴν ψυχὴν οὕτως ἔχει. A. pursues the comparison, but does not return to the main proposition for the sake of which the comparison is instituted.

a 12. τῷ εὐθεῖ ἢ εὐθύ, "the straight line as such," i.e. the straight line *in abstracto* as defined in geometry, which is unquestionably the meaning of τὸ εὐθύ in a 15, rectum *quid* rectum. *Quid*, the Latin equivalent of ἢ, was made familiar by the schoolmen. By τῷ εὐθεῖ Sophonias understood τῷδε τῷ εὐθεῖ τῷ ἐν χαλκῷ ἢ ἐν λίθῳ, the edge of the brazen or stone ruler. To this Bonitz (*Hermes* VII. p. 416 sqq.) objects as not justified by the language, and inconsistent with the purpose for which the illustration is introduced. As to the language: "Soll εὐθύ in dem Dativ τῷ εὐθεῖ eine andere Bedeutung haben, als in dem bestimmenden Zusatze ἢ εὐθύ, so scheint es ein unerlässliches Erforderniss zu sein, dass zu εὐθεῖ noch ein bestimmendes Wort gesetzt sei, aus dem dieser Unterschied ersichtlich würde, z. B. τῷ εὐθεῖ ξύλῳ, σώματι, τῷδε τῷ εὐθεῖ; ohne einen solchen Zusatz hiesse es doch mehr als billig ist von dem Leser beanspruchen, wenn er auf den blossen Anlass des ἢ unter dem Worte εὐθύ in dieser Verbindung verschiedene Begriffe denken soll." This is a strong argument, but not absolutely convincing. Philoponus is right in saying (49, 18 sq.) that τῷ εὐθεῖ is ambiguous, and Torstrik satisfied himself that the words might mean not only (1) abstractam recti notionem, τὸ τί ἦν εἶναι, definitionem recti or (2) lineam rectam mathematicam, rectum mathematicum quod mathematico corpori insit, but also (3) in materia sensili rectum expressum. Further, the mention of the brazen sphere is confusing. But when we turn to the purpose of the illustration all ambiguity is cleared away. If for the illustrative example we substitute the proposition which it is introduced to suggest, we shall have to write with Bonitz: τῇ ψυχῇ (not τῷ ζῳῳ), ἢ ψυχῇ, πολλὰ συμβαίνει, ὅσον αἰσθάνεσθαι τῶν αἰσθητῶν, οὐ μὲντοι γ' αἰσθάνεται χωρισθεῖσα αὐτῇ καθ' αὐτὴν ἢ ψυχῇ. This implies that by τῷ εὐθεῖ as well as by (a 15) τὸ εὐθύ is meant the straight line *in abstracto* and not the edge of the ruler or any other concrete object. For the simile is introduced merely to show that under certain conditions the soul in itself, and not the animate being, οὐκ ἂν εἴη χωριστή. Themistius, then, has caught A.'s intention in using the simile when with unusual freedom he paraphrases (6, 34 H., II, 24 Sp.) πῶς οὖν λέγομεν τὴν ψυχὴν φιλεῖν καὶ μισεῖν καὶ ὀργίζεσθαι; πῶς δὲ λέγομεν τὴν εὐθείαν ἅπτεσθαι τῆς σφαίρας κατὰ στιγμὴν; οὐ γὰρ ὅτι ἢ εὐθεῖα καθ' αὐτὴν (οὐδὲν γὰρ ἔστιν), ἀλλ' [sc. λέγομεν] ὅτι ὁ κανὼν ὁ εὐθύς, οὐδὲ ὅτι τῆς σφαίρας καθ' αὐτὴν, ἀλλ' ὅτι τῆς χαλκῆς· ἀχώριστον γὰρ καὶ τὸ εὐθύ καὶ τὸ σχῆμα τοῦ ξυλίνου κανόνος καὶ τῆς χαλκῆς σφαίρας, καὶ ἡ κατὰ στιγμὴν ἀφή, μᾶλλον δὲ ὅλος ἀφή τοῦ συνόλου πρὸς τὸ σύνολον. οὕτω δὲ καὶ τὰ τῆς ψυχῆς πάθη πάντα ἔοικεν εἶναι κοινὰ μετὰ τοῦ σώματος.

a 13. πολλὰ συμβαίνει. Compare the passage where the nature of the objects of mathematics is fully discussed, *Metaφh.* 1078 a 5 πολλὰ δὲ συμβέβηκε καθ' αὐτὰ τοῖς πράγμασιν ἢ ἕκαστον ὑπάρχει τῶν τοιούτων, ... ὥστε καὶ ἢ μήκη μόνον

καὶ ἡ ἐπίπεδα [sc. πολλὰ συμβέβηκε καθ' αὐτὰ]...17 ὥστ' εἴ τις θέμενος κεχωρισμένα τῶν συμβεβηκότων σκοπεῖ τι περὶ τούτων ἢ τοιαῦτα, οὐδὲν διὰ τοῦτο ψεῦδος ψεύσεται ..., 21 ἄριστα δ' ἂν οὕτω θεωρηθεῖ ἕκαστον, εἴ τις τὸ μὴ κεχωρισμένον θεῖη χωρίσας. Cf. 1077 b 22—30. In these passages μήκος = εὐθεία γραμμὴ = τὸ εὐθὺ ἢ εὐθύ.

a 13. τῆς χαλκῆς σφαίρας. So in *Metaph.* 1036 a 21 A. speaks of ἡ χαλκῇ ὀρθή. Possibly a sphere and other geometrical figures in brass were familiar objects in the lecture room. Cf. also *ib.* 997 b 35 οὔτε γὰρ αἱ αἰσθητὰ γραμμαὶ τοιαῦται εἰσιν οἷας λέγει ὁ γεωμέτρης (οὐδὲν γὰρ εὐθὺ τῶν αἰσθητῶν οὕτως οὐδὲ στρογγύλον· ἅπτεται γὰρ τοῦ κανόνος οὐ κατὰ στιγμήν ὁ κύκλος, ἀλλ' ὥσπερ Πρωταγόρας ἔλεγεν ἑλέγχων τοὺς γεωμέτρους). Note that, as there ὁ κύκλος without qualification touches the ruler, the example of an αἰσθητὴ γραμμὴ, so here (403 a 13) τὸ εὐθὺ ἢ εὐθύ has the property of touching τῆς χαλκῆς [i.e. αἰσθητῆς] σφαίρας. Protagoras objected that the objects of the geometer were not sensible objects. Contact at a point, as the point is defined in geometry, is not borne out by sense.

a 14. οὕτω. So E alone: all the other MSS. have τούτου, which was also the text of Philoponus and Simplicius. Whether they join τοῦτου with χωρισθέν or make it governed by ἅψεται is, in the opinion of Bonitz l.c., not clear: Philop. 49, 34 ἐν δὲ τῷ εἰπεῖν οὐ μέντοι γε ἅψεται τοῦτου χωρισθέν τὸ εὐθὺ τὴν εὐθύτητα αὐτὴν [sc. λαμβάνει]. αὕτη οὖν, φησί, χωρισθεῖσα τοῦ ὑποκειμένου οὐκέτι πείσεται τοῦτο, Simpl. 18, 13 οὐ μέντοι ἅψεται τοῦτου χωρισθέν τὸ εὐθύ. τοῦτου μὲν τοῦ ὑποκειμένου λέγει, εὐθὺ δὲ νῦν τὸ ὡς χαρακτῆρα καὶ τὸ ὡς εὐθύτητα. Trend. and Torst. keep the reading τοῦτου, which they join with χωρισθέν. The latter indeed pronounces οὕτω to be an error due to the scribe of E (scripturae vitio) and adds "τοῦτο enim rem sensilem quasi digito monstrat." But the usual Aristotelian pronoun for a concrete thing is ὅδε, not οὗτος, and even then some addition is required as in ὅδε ὁ ἄνθρωπος, τόδε τι. On the other hand οὕτω, if taken with ἅψεται and as = κατὰ στιγμήν, gives the following sense; the abstract straight line will not touch the brazen sphere at a point, for it has no separate existence. The properties of soul may be illustrated by the properties of a straight line, one of them being contact with a sphere at a point. To this will correspond some active or passive function of soul (e.g. αἴσθησις). But just as contact implies concrete bodies, so that the straight line *in abstracto* will only have this property as long as it is embodied in something concrete, so the soul will cease to exercise its active or passive functions when separated from the body. As a matter of fact, the straight line *in abstracto* has no separate existence apart from the particular concrete things which are straight, Philop. 50, 3 ἐπεὶ μηδὲ ὑφέστηκε, and, in the hypothetical case we are considering, the soul will be like it in this respect. That the comparison of soul to the mathematical straight line is introduced for a special purpose in working out one of the two alternatives suggested by the problem we are considering is clear from 403 b 19 καὶ οὐχ ὥσπερ γραμμῇ.

a 15. ἀχώριστον γάρ...τινός ἐστιν. A.'s doctrine as to the question what are the objects of the mathematical sciences is most fully explained in *Metaph.* M. 3. See also the excerpts above in the note on a 13 πολλὰ συμβαίνει. It is thus summarised *Ind. Ar.* 860 a 50 τὰ μαθηματικὰ ἀχώριστα, χωριστὰ τῇ νοήσει, θεωρεῖται ἢ χωριστά. *Metaph.* 1026 a 9 ὅτι μέντοι ἓνα μαθήματα ἢ ἀκίνητα καὶ ἢ χωριστὰ θεωρεῖ, δηλον, *ib.* 13 ἡ μὲν γὰρ φυσικὴ περὶ χωριστὰ μὲν ἀλλ' οὐκ ἀκίνητα, τῆς δὲ μαθηματικῆς ἓνα περὶ ἀκίνητα μὲν οὐ χωριστὰ δ' ἴσως [ἐστὶν] ἀλλ' ὡς ἐν ὕλῃ. 1059 b 13 χωριστὸν γὰρ αὐτῶν [sc. τῶν μαθηματικῶν] οὐδέν. *Phys.* II. 2, 193 b 24 καὶ γὰρ ἐπίπεδα καὶ στερεὰ ἔχει τὰ φυσικὰ σώματα καὶ μήκη καὶ στιγμὰς, περὶ δὲ σκοπεῖ ὁ μαθηματικός. ἔτι ἡ ἀστρολογία [astronomy in general, both mathematical and physical] ἑτέρα ἢ μέρος τῆς φυσικῆς· εἰ γὰρ τοῦ φυσικοῦ τὸ τί ἐστὶν ἥλιος καὶ

σελήνη εἶδέναι, τῶν δὲ συμβεβηκότων καθ' αὐτὰ μηδέν, ἄτοπον, ἄλλως τε καὶ ὅτι φαίνονται λέγοντες οἱ περὶ φύσεως καὶ περὶ σχήματος σελήνης καὶ ἡλίου, καὶ πότερον σφαιροειδὴς ὁ κόσμος καὶ ἡ γῆ ἢ οὐ. περὶ τούτων μὲν οὖν πραγματεύεται καὶ ὁ μαθηματικός, ἀλλ' οὐχ ἡ φυσικοῦ σώματος πέρας ἕκαστον. οὐδὲ τὰ συμβεβηκότα θεωρεῖ ἢ τοιούτοις οὐσι συμβέβηκεν. διὸ καὶ χωρίζει· χωριστὰ γὰρ τῇ νοήσει κινήσεως ἐστὶ, καὶ οὐδὲν διαφέρει, οὐδὲ γίνεται ψεύδος χωριζόντων, ἰδ. 194 a 9 ἢ μὲν γὰρ γεωμετρία περὶ γραμμῆς φυσικῆς σκοπεῖ, ἀλλ' οὐχ ἡ φυσικῇ, ἢ δ' ὀπτική μαθηματικὴν μὲν γραμμὴν, ἀλλ' οὐχ ἡ μαθηματικὴ ἀλλ' ἡ φυσικῇ. This doctrine is consistently maintained throughout the *De A.* and is the basis of the phrase by which the objects of mathematics are often denoted, viz. τὰ ἐν ἀφαιρέσει ὄντα (or λεγόμενα). The relevant passages include 403 b 14 sq., 429 b 18—20, 432 a 3—6, where see *notes*.

a 16. πάθος must be understood as in 403 a 3 in the wider sense of attributes generally (402 a 8 *note*) and not restricted to specific emotions (animi perturbationes, affectus, affectiones) as defined and enumerated by Aristotle, *Eth. Nic.* 1105 b 20 sqq., and described in detail, *Rhet.* II. cc. 2—11. That the word has the wider sense in 403 a 3 sqq. is plain from the mention of αἰσθάνεσθαι and νοεῖν (cf. πάσχειν οὐδὲ ποιεῖν a 6 sq.), and to restrict it now would be fatal to the argument. A.'s object in what follows is to prove that every mental operation has its bodily concomitant. As many of the bodily changes are internal and unperceived, he argues indirectly (σημείον δὲ a 19) from the difference of temperament in man and man. This difference of temperament cannot be due to the object, i.e. the external causes (παθημάτων a 20) which tend to excite emotion, for in that case the same slight would rouse all men alike to anger, the same terrors would excite fear in all alike, whereas it is notorious that the choleric temper is prone to anger on trivial occasions and the melancholic temper so timid that it gives way to groundless alarms, these differences between man and man being due to the bodily constitution. Thus anger cannot take place without the body, without a concomitant affection of a definite part of the body, and this bodily affection cannot take place without the soul, for the body in which it takes place is at all events animate: τὸ ἔργον οὐχ ὑπάρχει ἄνευ αἰσθήσεως. What is said of anger and fear must be understood to apply to all the mental functions. A. chose the emotions to illustrate the wider sense of operations or attributes simply because the dependence on the body, though nowhere perfectly clear, is more obvious in their case. The analogous argument from the dependence of sensation upon sense-organs will be found 408 b 20 sqq.

a 18. ἅμα γὰρ τούτοις πάσχει τι, is in some degree affected simultaneously with them, i.e., whenever there is a mental affection, a bodily affection accompanies it. The mental and the bodily processes go together. The bodily change may, however, be internal and not capable of direct verification; hence A. resorts to the argument from signs.

a 20. παθημάτων. "Causes of mental change," Alex. Aphr. *De An.* 13, 1 ἀ ἡ ὁργὴν ἢ φόβον ἢ ἐπιθυμίαν ἢ τι τοιοῦτο πάθος ἄλλο κινεῖν οἶά τε. Bonitz, *Ind. An.* s.v., after saying that the meanings of πάθος and πάθημα in general agree, notes as one point of dissimilarity usum voc. πάθος excedit πάθημα, ubi non motum et mutationem, sed eius causam significat (554 b 26 sqq.). Thus this shade of meaning must be distinguished here from that, with which some have confused it, of πράξις φθαρτικὴ ἢ ὀδυνηρά, for which cf. *De Resp.* 17, 479 a 15 καὶ μικρῶν παθημάτων ἐπιγυνομένων ἐν τῷ γήρῳ ταχέως τελευτῶσιν. The incentives to anger or fear are not necessarily calamities or painful occurrences.

**a 22.** ὀργᾶ...ὀργίζεται. The word ὀργάν is used of buds swollen to bursting (Lat. *turgescere*): but also of the human body, when the blood is up or in a ferment, cf. *Probl.* VII. 2. 886 a 32 ἐὰν ὀργῶν τύχη τὸ σῶμα. That A. observed the etymological connexion of ὀργίζεσθαι with ὀργάν seems plain from the context. But the subject to ὀργίζεται must be personal. This is one of many instances of subject omitted. The subject omitted can generally be supplied from the verb, as ὁ ὀργιζόμενος here: cf. 418 a 22, 23 (bis), 428 b 1, 3, 5, 7, 430 b 3, 8, 10, 12, 15, 16, 22, 23, 431 a 20, 24, b 6, 7, 8, 9, 13. For a typical case see 421 b 30 ὀργᾶ: cf. 425 b 13. Sometimes it is safer to supply a subject in the neuter, especially with αἰσθάνεσθαι or νοεῖν, on the analogy of 417 a 10 sq., b 8 τὸ φρονοῦν, ὅταν φρονηῇ, 426 b 17 κρίνειν τὸ κρίνων, 430 b 24 τὸ γνωρίζον. Sometimes the first person plural has preceded, e.g. 420 a 14, 425 b 13. There are doubtful cases, e.g. 423 a 18, 429 b 13, 430 a 25. *Ind. Ar.* 589 b 47 tertiam personam singularis non addito pronomine τίς notum est ad significandum subiectum universale (germanice “man”) ita usurpari, ut iam in superioribus aliquo modo, veluti in infinitivo (cf. Kruger, *gr. Gr.* 61, 4, 5) vel in substantivo numeri pluralis, a quo ad singularem indefinitum transitur, illud subiectum universale contineatur. Hos fines vulgati usus raro excedit Ar. (pleraque exempla quae congesserunt Zell. ad *Eth. N.* III. 1. 6, Wz. ad *Org.* 3 b 22 a vulgari usu non differunt), veluti *Eth. Nic.* 1152 b 16 ἐτι ἐμπόδιον τῷ φρονεῖν αἱ ἡδοναί, καὶ ὅσῳ μᾶλλον χαίρει, μᾶλλον. *Ind. Ar.* 763 a 25 in omittendo pron. indef. τίς, τί Ar. easdem fere leges observat ac reliqui scriptores: ad exempla allata insolentioris omissionis adde *De Gen. et Corr.* I. 4. 319 b 11.

**a 24.** ἐν τοῖς πάθεσι γίνονται, sc. οἱ ἄνθρωποι, the ellipse so common with φασί. The expression ἐν τοῖς πάθεσι γίνεσθαι (cf. Eng. “get in a passion”) is an elaboration of the simple verb πάσχειν used above. Cf. *Pol.* 1287 b 3 ἐν πάθει ὄντες, *De Insomn.* 2. 460 b 3 ἀπατάμεθα...ἐν τοῖς πάθεσιν ὄντες, ἄλλοι δ' ἐν ἄλλοις, οἷον ὁ δειλὸς ἐν φόβῳ, ὁ δ' ἐρωτικὸς ἐν ἔρωτι.

**a 25.** Λόγοι ἐνυλοὶ. Λόγος=notion, content of definition, which is opposed, precisely as is form or quiddity, to matter. Cf. 403 b 2, first *note*. The compound adjective ἐνυλος might conceivably be taken, on the analogy of ἐνυδρος, in either of two ways, as (1) immanent in matter, or (2) having matter in it, apparently favoured by *Μεταφῆ.* 1033 a 5. *Ind. Ar.* s.v. mentions no other use of the compound in A., but it is frequent in the Greek commentators, who interpret it according to (1) and in 430 a 6 replace A.'s τὰ ἔχοντα ὕλην (as opposed to τὰ ἀνευ ὕλης) by ἐνυλα: Them. 97, 37 sq. H., 180, 12 sqq. Sp., Simpl. 239, 7, Philop. 534, 13. So Alex. Aphr. Ἀπ. καὶ λύσ. 55, 9 interprets ἐνυλον εἶδος as τό τινος εἶδος. Cf. ad h. l. Them. 7, 25 H., 13, 8 Sp. ἐν ὕλῃ τὸ εἶναι ἔχοντες, Philop. 54, 15 sq., Simpl. 20, 6. See also 403 b 11 and *note*.

**a 26.** οἷον τὸ ὀργίζεσθαι. In the *Rhetoric* 1378 a 31 sqq. anger is defined as a painful desire (ὄρεξις) of apparent vengeance, on account of an apparent slight done to one's self or one's friends, when the slight is unjustifiable. This definition, which leaves out the physical aspect, is represented in a condensed form by ὄρεξις ἀντιτυπήσεως below. κίνησις. This word covers at once physical movement and psychical change. And thus the definition which it introduces includes in brief both types of definition, the physicist's and the dialectician's, which are distinguished below. σώματος ἢ μέρους ἢ δυνάμεως. By thus adding “or of a part or of the faculty belonging to it” Aristotle is providing for those cases where the mental process is thought not to affect the body as a whole, but to be confined to some particular organ, as seeing to the eye. Such an organ operates or functions in virtue of the faculty which resides in it and constitutes it an organ or instrument: the organ implies the faculty, the eye vision, as will

be explained 424 a 24—28. The physical fact accompanying anger is, as we shall see, a ferment of the blood, or of the heat, about the heart.

a 27. ὑπὸ τοῦδε. The external cause which excites anger is defined in the *Rhetoric* l.c. as φαινόμενη διλογία. ἔνεκα τοῦδε. The final cause of anger is defined below as ἀντιλύπησις and in the *Rhetoric* l.c. as τιμωρία.

403 a 27—b 19. A digression upon the relation of psychology to physics or the science of nature. To study the soul as thus dependent upon the body falls, then, to the natural philosopher. The emotions would be differently defined by the mere dialectician and the mere biologist: e.g. anger to the one is a desire of revenge, to the other a ferment of blood about the heart, or the like; just as a house may be defined, on the one hand, by its end, protection from the weather, on the other hand, by the particular materials, the stones, bricks and timber, of which it is composed. A complete definition, whether of anger or of house, must include both end and materials; it must take account of the form as well as of the matter: and such a complete definition alone satisfies the requirements of physics, the true science of nature. But what of the two incomplete definitions, viz. that which takes account of the form, neglecting the matter, and that which deals with the matter to the exclusion of the form? The truth is that the properties of things are forms which fall for investigation under different branches of science according to the varying degrees in which they are implicated in matter. There is no science that investigates the properties of matter which are not separable, nor even regarded as separable, from matter. Physics treats of all the properties of such and such bodies and of such and such matter, viz. of natural bodies capable of motion, and of sensible matter. When the properties of bodies are not thus regarded, they lie outside of physics and in some cases fall within the province of the arts and crafts. Properties of bodies which, though really inseparable, are for scientific purposes treated as separable, i.e. as not bound up with the particular bodies to which they belong, fall under mathematics, while, if they are regarded as wholly separate from body and from matter, they fall under First Philosophy or metaphysics.

To return from this digression. As we were saying, the affections or properties of the soul, in so far as, like anger or fear, they are implicated in matter, are inseparable from the physical matter of the animal, while at the same time, unlike the mathematical properties of bodies, they cannot be abstracted and treated as separable in thought [§ 11].

a 27. διὰ ταῦτα ἤδη, i.e. because the emotions are "implicit in matter," because they imply bodily movement, or at least modification (ἀλλοίωσις) of a faculty of an animal. No sooner is this recognised than an inference can at once (ἤδη) be drawn. On this idiomatic use of ἤδη see Cope on *Rhetoric* I. I, 1354 b 7.

a 28. φυσικοῦ. Cf. *Metaph.* 1026 a 5 διότι καὶ περὶ ψυχῆς ἐνίας θεωρῆσαι τοῦ φυσικοῦ, ὅση μὴ ἔσται τῆς ψυχῆς ἐστίν, *De Part. An.* I. I. 641 a 14—32 and the remarkably clear discussion 641 a 32—b 10 of the ἀπορία πότερον περὶ πάσης ψυχῆς τῆς φυσικῆς ἐστὶ τὸ εἰπεῖν ἢ περὶ τινος, terminating in the conclusion 641 b 8 δῆλον οὖν ὡς οὐ περὶ πάσης ψυχῆς λεκτέον· οὐδὲ γὰρ πᾶσα ψυχὴ φύσις, ἀλλὰ τι μόνον αὐτῆς ἐν ἣ καὶ πλείω. Cf. *De Sensu* I. 436 a 17—b 6, *De Juvent.* 27 (*De Resp.* 21), 480 b 23 sqq., *Phys.* VIII. 3, 253 a 32—b 9.

a 28. ἡ τῆς τοιαύτης, int. ἡς τὰ πάθη λόγοι ἐνυλοὶ εἰσιν, i.e. soul as the *form* of an animate body, leaving undecided for the present the question as to whether there is any faculty of soul independent of body. But the treatment of νοῦς in III., cc. 4—8 belongs rather to First Philosophy than to physics, if we accept the conclusion of *De Part. An.* 641 b 8 just cited.

a 29. **φυσικός**. To be understood in a narrower and less accurate sense than in the preceding line, a 28; the "physicist" popularly so called concerning himself with the matter only to the neglect of the form. Against this limitation of the sphere of *φυσική* A. protests forcibly (e.g. *Phys.* II., *De Part. An.* I.): compare the question below (b 7) *τίς οὖν ὁ φυσικός τούτων*, and the answer (b 8) *ἢ μᾶλλον ὁ ἐξ ἀμφοῖν*. **διαλεκτικός**. See note on 403 a 2 *διαλεκτικῶς supra*. As here *διαλεκτικός* is opposed to *φυσικός*, so elsewhere *λογικῶς* is opposed to *φυσικῶς* [see Zeller, *Aristotle* &c., Eng. Tr. I. 174 n. 2]. The definition of the physicist will be scientific; that cited above from the *Rhetoric* is dialectical, for rhetoric and practical philosophy generally, owing to the nature of their subject-matter (viz. what is contingent and only generally, not universally true), are content with something less than the accuracy (*ἀκρίβεια*) of theoretical science. Maier, l.c. II. b, p. 61, remarks that, by this contrast, we are reminded of Plato's *διαλεκτικός*, who is the true philosopher.

a 31 *ξέσιν*...32 *θερμού*. This piece of old-world lore survives in the phrase "to make one's blood boil." Cf. *De Part. An.* II. 4. 650 b 35 *θερμότητος γὰρ ποιητικὸν ὁ θυμός, τὰ δὲ στερεὰ θερμανθέντα μᾶλλον θερμαίνει τῶν ὑγρῶν· αἱ δ' ἴνες [fibrine] στερεὸν καὶ γεῶδες, ὥστε γίνονται οἶον πυρίαι ἐν τῷ αἵματι καὶ ξέσιν ποιοῦσιν ἐν τοῖς θυμοῖς*. In other words, what is meant is a corporeal expansion due to the *ξέσις* of the blood implied by the idea of "bursting with rage," which finds its external sign in the swelling of the veins. Cf. a 22 *ὄργῃ τὸ σῶμα ποτε*. Fear, on the contrary, chills the blood, l.c. 650 b 27 sq., *ib.* III. 4, 667 a 13—19, IV. 5, 679 a 25. Both *ξέσις* and *κατάψυξις*, being *ἀλλοιώσεις* or qualitative changes, fall under the *κίνησις* of 403 a 26.

403 b 2. *τὸ εἶδος καὶ τὸν λόγον*. The *καὶ* is explicative, as is obvious from the next clause. Cf. *Phys.* IV. 1, 209 a 21 *εἶδος καὶ λόγος τῶν πραγμάτων, Μεταφῆ.* 1044 b 12 *τὸ δ' ὡς εἶδος (sc. αἰτιῶν) ὁ λόγος, ἀλλ' ἀδηλος, ἐὰν μὴ μετὰ τῆς αἰτίας ἢ ὁ λόγος*, 996 b 8 *τὸ δ' εἶδος ὁ λόγος, Phys.* I. 7. 190 a 16 *τὸ γὰρ εἶδει λέγω καὶ λόγῳ [sc. ἐν] ταυτόν*. The analysis of the concrete particular is sometimes into matter, *ὕλη*, and form, *εἶδος καὶ μορφή*, sometimes into matter, *ὕλη*, and notion, *λόγος καὶ μορφή*: compare 412 a 8 with *Μεταφῆ.* 1042 a 28 sq., also 1058 b 10 *ὁ δὲ Καλλίας ἐστὶν ὁ λόγος μετὰ τῆς ὕλης*.

b 2. *ὁ μὲν γὰρ λόγος εἶδος τοῦ πράγματος*. The text is uncertain. So far from agreeing with Trend. "*εἶδος...et facilius est et rei aptius*," I suspect the word (1) because of its inadequate authority, two inferior MSS. U and X, (2) because, even if *εἶδος* had the strongest evidence, the sentence would still be a truism, which there seems no sufficient reason for repeating when it has just been assumed in the preceding sentence. The great majority of our MSS. read *ὅδε* or *ὁ δέ*, and this is confirmed by Simpl. and Philop. Obviously the uncial OΔΕ is the common source, and this might be read *ὅδε*, as W. and possibly Them., or *διῳκισμὸς ὁ δέ*, as Simpl. Plutarchus Atheniensis apud Simpl. and Philop. took it to be. Simpl. 21, 35 *οὐκ ὡς ὁ φιλόσοφος ἐξηγέται Πλούταρχος, ἀντιδιαρῶν τὸν λόγον πρὸς τὸν τοῦ πράγματος, ἀλλ' εἰπὼν τὴν ὀρεξὶ τῆς ἀντιληπτήσεως εἶδος εἶναι καὶ λόγον, τὸν δὲ λόγον τοῦ πράγματος εἶναι φησι, τούτεστι τὸ εἶδος, καθ' ὃ εἰδοποιεῖται ἡ ὀργή. ἐπεὶ δὲ σύνθετος ἡ ὀργή, ἀνάγκη καὶ τὸν λόγον καὶ τὸ εἶδος ἐν ὕλῃ ὄρᾶν, εἴ ἔσται, ἐπειδὴ τὸ εἶναι αὐτῷ οὐκ ἄνευ ὕλης*. It appears to me that Simpl. represents our sentence by the words *τὸν δὲ λόγον τοῦ πράγματος εἶναι φησι*. If we turn this back from oblique to direct we get the text of Simpl., viz. *ὁ δὲ λόγος τοῦ πράγματος*. That Simpl. did not read *εἶδος* is clear from his introduction of the word after *τούτεστι*. It would seem, then, that Plutarch, like Philoponus, explained "The one definition is the form, the other belongs to the thing," i.e. not to the form, for Plutarch made the two clauses stand opposed. Simpl.,

having precisely the same reading, explained rather differently, "The one definition is the form and the form belongs to the thing," i.e. implies the σύνολον of which it is the form. Philop. 59, 15 ὑποστυκτέον εἰς τε τὸν γὰρ σύνδεσμον καὶ εἰς τὸν δέ, ἵνα ᾗ οὕτως· ὁ μὲν γὰρ τῶν ὁρισμῶν ὁ λόγος ἐστὶ καὶ ἡ αἰτία ᾗτοι τοῦ εἶδος τοῦ θύμου, ὁ δ' ἕτερος τοῦ πράγματός ἐστιν ὁρισμός, τουτέστι τῆς οὐσίας καὶ τῆς ὕλης. That is, Philop. would punctuate ὁ μὲν γὰρ, λόγος· ὁ δέ, τοῦ πράγματος. He did not read εἶδος. The evidence of Them., it is true, is indecisive: (7, 32 H, 13, 18 Sp.) ὁ μὲν γὰρ λόγος τῆς ὀργῆς ὄρεξις ἀντιλυπῆσεως. ἀνάγκη δὲ ἐγγίνεσθαι τοῦτο τὸ εἶδος ἐν ὕλῃ τοιαῦδε· ὥσπερ οἰκίας ὁ μὲν τὸ εἶδος καὶ τοῦ εἶδους τὸν λόγον ἀποδίδωσιν, κτέ. Them. means "for the notion of anger is a desire of retaliation, but this form must be manifested in matter of a certain kind." This does not prove that he had εἶδος in the first clause, and in the second he may have simply substituted τοῦτο τὸ εἶδος for A.'s τοῦτον [sc. τὸν λόγον], as he was quite justified in doing, for A. has in the preceding sentence (b 2) τὸ εἶδος καὶ τὸν λόγον. Whence did Them. get ὄρεξις ἀντιλυπῆσεως in his first clause? Possibly from εἶδος (cf. b 2), but more probably from ὅδε. No weight can be attached to Sophonias 8, 35 εἰ γὰρ ἀνάγκη τὸν λόγον τόνδε τοῦ πράγματος ἐν ὕλῃ τοιαῦδε εἶναι, for his τόνδε may replace (b 3) τοῦτον. There is no proof that he read εἶδος. If ὅδε is right, A. means "for this (viz. desire of retaliation) is the notion of the thing," i.e. of anger, ὅδε being attracted to the gender of λόγος. This gives a satisfactory sense and avoids tautology. If we accept εἶδος, the lectio facilior, the question arises, why should A. reiterate the identity of λόγος and εἶδος which he had assumed already (403 a 25 λόγοι ἐνυλοὶ, b 2 τὸ εἶδος καὶ τὸν λόγον)? A. may have done so, being on occasion as pleonastic as he is elsewhere elliptical, but, if so, the text of all the Greek commentators was faulty in this place. Did A. write simply ὁ μὲν γὰρ λόγος τοῦ πράγματος (ὁ μὲν subject, λόγος predicate, the masculine pronoun again by attraction), and are ὅδε and εἶδος two divergent supplements to fill a non-existent gap?

b 3. τοιαῦδε, of a definite sort (not τῇ τυχούσῃ), i.e. the appropriate matter, cf. 412 b 11, 414 a 26 ἐν...τῇ οἰκίᾳ ὕλῃ. εἰ ἔσται, if it is to exist at all. A. uses ἔσται, not γενήσεται, the form being eternal: *Metaφh.* 1044 b 21 ἐπεὶ δ' ἔνια ἄνευ γενέσεως καὶ φθορᾶς ἔστι καὶ οὐκ ἔστιν, οἶον...καὶ ὅλως τὰ εἶδη καὶ αἱ μορφαί, cf. 1039 b 26. But A. is not always consistent and freely uses ἐγγίνεσθαι, ἐπιγίνεσθαι or simply γίνεσθαι (e.g. *Metaφh.* 1035 a 5) of his immanent form. οἰκίας. House, like anger, admits of three definitions. The first, σκέπασμα κωλυτικὸν φθορᾶς κτέ., is the definition κατὰ τὸν λόγον μόνον, corresponding to ἀγγεῖον σκεπαστικὸν κτέ. of *Metaφh.* 1043 a 16. It answers to ὄρεξις ἀντιλυπῆσεως in the case of anger. The second, mentioning only the materials (stones, bricks and timber), answers to the ζέσις τοῦ περὶ καρδιαν αἵματος of 403 a 31; while the third, only indicated in outline, is the one which A. accepts and to which he refers in b 8 ὁ ἐξ ἀμφοῖν [sc. ὁριζόμενος], cf. *Metaφh.* 1043 a 14—19. The four causes of a house are specified *Metaφh.* 996 b 6—8. For οἰκοδομική as (a) the form, cf. 1070 b 33; as (b) the efficient cause (τὸ κινεῖν) 1070 b 29, *Phys.* II. 4, 196 b 26.

b 6. ἕτερος δ', int. φήσει.

b 6. ἐν τοῦτοις τὸ εἶδος ἔνεκα τῶνδ', will give as definition the form residing in these, viz. in the materials aforesaid. The third definition takes account not only of the matter, ἐν τοῦτοις, but of the form as well. It goes on to mention the "final cause" ἔνεκα τῶνδ' "with a view to this or that end," i.e. protection from the weather. Them. 7, 36 H., 13, 24 Sp. ἕτερος δ' ἀμφω συλλαβῶν, ὅτι σκέπασμα τοιονδὶ ἐξ ὕλης τοιαῦσδε, *Simpl.* 22, 7 ἐν ξύλοις δηλαδὴ καὶ λίθοις



καὶ πλίνθοις τὸ εἶδος, τουτέστι τὸ σκέπασμα, προσθεῖς καὶ τὸ τέλος, ἐπειδὴ ἐν τοῖς τεχνητοῖς διώριστα τὸ οὐ ἔνεκα ἐκ τοῦ εἶδους. Biehl's omission of the comma after εἶδος is confirmed by this remark of Simplicius. The construction ἐν τούτοις τὸ εἶδος in A.'s Greek hardly presents any difficulty. It differs from e.g. 429 b 14 τόδε ἐν τῷδε only in being object to φήσκει instead of subject to (unexpressed) ἐστὶ. Ἐν τῷδε there must be an attribute as well as ἐν τούτοις here. Compare the prepositional phrases with περὶ cited in *note* on 402 a 8 περὶ αὐτήν.

b 7. ὁ φυσικός. Which of these three definitions is truly scientific as belonging to φυσικὴ and therefore to be employed by the physicist? τούτων denotes those who define, as in b 1 (like ὁ μὲν...ὁ δὲ...ἕτερος). The man who studies the concrete realities of the natural universe, natural bodies, sensible substances, things concrete of form and matter, is ὁ φυσικός. His γένος comprises τὰ ἔχοντα ἐν ἑαυτοῖς ἀρχὴν κινήσεως. In his treatment of them he will ignore neither the formal nor the material cause. The point is frequently urged by A., e.g. *Phys.* II. 2, 194 a 12—27, 194 b 9 sqq., II. 7, 198 a 22 ἐπεὶ δ' αἱ αἰτίαι τέτταρες, περὶ πασῶν τοῦ φυσικοῦ εἰδέναι, καὶ εἰς πάσας ἀνάγων τὸ διὰ τί ἀποδώσει φυσικῶς, τὴν ὕλην, τὸ εἶδος, τὸ κινῆσαν, τὸ οὐ ἔνεκα. ἔρχεται δὲ τὰ τρία εἰς ἐν πολλάκις· τὸ μὲν γὰρ τί ἐστὶ καὶ τὸ οὐ ἔνεκα ἐν ἐστὶ, τὸ δ' ὅθεν ἡ κίνησις πρῶτον τῷ εἶδει ταῦτο τούτοις. This last remark explains why here in *De A.* and in *Phys.* II. 2, l.c., A. confines himself to insisting upon attention to the form as well as the matter. *Μεταφῆ.* 1037 a 14 ἐπεὶ τρόπον τινὰ τῆς φυσικῆς καὶ δευτέρας φιλοσοφίας ἔργον ἢ περὶ τὰς αἰσθητὰς οὐσίας θεωρία· οὐ γὰρ μόνον περὶ τῆς ὕλης δεῖ γνωρίζειν τὸν φυσικόν, ἀλλὰ καὶ τῆς κατὰ τὸν λόγον, καὶ μάλλον. Or again, he may adopt a threefold division, *Phys.* II. 7, 198 a 31 ὥστε τὸ διὰ τί καὶ εἰς τὴν ὕλην ἀνάγοντι ἀποδίδονται, καὶ εἰς τὸ τί ἐστὶ, καὶ εἰς τὸ πρῶτον κινήσαν. περὶ γενέσεως γὰρ μάλιστα τούτων τὸν τρόπον τὰς αἰτίας σκοποῦσι, τί μετὰ τί γίνεται, καὶ τί πρῶτον ἐποίησεν ἢ τί ἔπαθε, καὶ οὕτως αἰετὶ τὸ ἐφεξῆς. In *Phys.* II. 9, 200 a 30—b 4 A. returns to the twofold division of end and necessary condition, the former taking the place of form, the latter being identical with matter. This is also his standpoint in *De Part. An.* I. 1.

b 8. ἢ μάλλον. Here as often ἢ introduces the writer's answer to his own question, i.e. the solution of the problem which he tentatively proposes. This solution, however, frequently expresses the full strength of his conviction, so that the apparent modesty of the suggestion becomes a mere trick of style, like ἴσως which, e.g. 402 a 23, under the veil of "perhaps" implies "beyond all doubt." Similarly ἢ thus used ceases to be interrogative ("or shall we rather say?") and tends to become frankly affirmative. *Ind. Ar.* 312 b 57 quoniam ἢ solennis est particula in altero membro interrogationum disiunctivarum idque alterum membrum plerumque ad affirmationem vergit, inde factum esse videtur, ut saepissime, ubi ἢ usurpatur non antecedente priore interrogationis membro a πότερον exordiendo, interrogationis natura fere delitescat eaque enunciatio respondentis potius et modeste affirmantis, quam quaerentis esse videatur. itaque exposita aliqua ἀπορία eius λύσις per particulam ἢ induci solet. This usage is stereotyped in the treatise entitled from its contents *Problems*, where διὰ τί introducing the problem is regularly followed by ἢ ὅτι introducing the solution. Cf. also *Pol.* 1338 b 1 where, as Mr Newman says, instead of ἢ μάλλον modeste affirmantis we expect ἀλλὰ or ἀλλὰ μάλλον (but ἀλλὰ has preceded).

b 8. ὁ ἐξ ἄμφω = ὁ ἄμφω ταῦτα τῷ ὄρω συντιθεῖς. Cf. *Phys.* I. 3, 186 b 34 καὶ καθ' οὗ ἄμφω, καὶ ἑκάτερον καὶ τὸ ἐκ τούτων λεγέσθω, *Μεταφῆ.* 1043 a 18 οἱ δ' ἄμφω ταῦτα συντιθέντες τὴν τρίτην καὶ τὴν ἐκ τούτων οὐσίαν [sc. λέγουσιν]. One might be tempted to think that the subject to be supplied was ὄρος, which is grammatically impossible if we consider b 7 τούτων (cf. b 1), b 8 ἀγνοῶν, to

say nothing of b 7, 8, 9 *ὁ περὶ κτέ.* compared with b 13 *τεχνίτης*, 15 *ὁ μαθηματικός*, 16 *ὁ πρῶτος φιλόσοφος*. It is, however, the definitions and not their authors that are really under comparison, and Simplicius is therefore justified in explaining the meaning thus, 22, 9 *διακρίνας δὴ τοὺς ὅρους ζητεῖ λοιπόν, τίς ἐκ τούτων ὁ φυσικός, καὶ ἐγκρίνει εἶναι τὸν ἐξ ἀμφοῖν*. For the carelessness of expression cf. Cic. *De Fin.* II. § 44 Cum Epicuro autem hoc plus est negotii, quod e duplici genere voluptatis coniunctus est, i.e. Epicurus defines the *summum bonum* so as to include under it two kinds of pleasure; what Cicero says is, "Epicurus is a compound of two kinds of pleasure." It is just possible that if A. had taken the trouble to complete the sentence it would have run *ὁ ἐξ ἀμφοῖν τὴν οὐκίαν ὡς συνεστῶσαν ὀριζόμενος*: but with his love of brevity and *ad sensum* construction *ὧν* is the more natural supplement.

b 9. *ἐκείνων δὲ*, the other two, the proposers of the imperfect definitions which give (1) the form without the matter, (2) the matter without the form. Is there a branch of science or of enquiry to which one or other of these imperfect definitions is appropriate? In other words, what science, if any, treats of either (1) the form of concrete things, neglecting the matter, or (2) the matter, neglecting the form? There seems no direct answer, unless we suppose that, question (1) being dropped, (2) is answered in the clause b 9 *ἢ οὐκ ἔστι... ἢ χωριστά*, a view which Philop. favours, 60, 28—31. We have instead, b 10—16, four branches of enquiry distinguished. The first three, viz. physics, the productive arts and sciences, mathematics, when they define, certainly include both *λόγος* and *ὕλη* in the definition. But not all in the same way, and the difference in the mode is referred to the different degrees in which "the things are separable from the matter," cf. 429 b 21 sq. With 403 b 7—16 it is instructive to compare 429 b 10—22, 431 b 12—19. *ἢ οὐκ ἔστι*. See on b 8 *ἢ μᾶλλον*.

b 10. *τὰ πάθη... ἢ χωριστά*, the inseparable properties of matter which are not even regarded for purposes of study as separable: secondary matter is meant, *ἐσχάτη ὕλη*, iam formata materia, like the stones, bricks and mortar of b 5: *ὕλη* is used in the same sense throughout the discussion of *γένεσις* in *Metaph.* Z., cc. 7—9. Legebatur 10 *τὰ μὴ χωριστά, μηδ' ἢ χωριστά, et recte Trend. observavit requiri potius τὰ μὴ χωριστά, ἢ τε μὴ χωριστά*. At non hoc voluit Aristoteles. Deletā virgulā et grammatica ratio constat et philosophica. Dicit enim hoc: *οὐκ ἔστι τις ὁ περὶ τὰ πάθη τῆς ὕλης ἀχωριστὰ ὄντα μηδ' ἢ χωριστά τὴν ἐπίσκεψιν ποιούμενος*, 'ne ita quidem quatenus separabiles sunt,' hoc est quatenus generales sunt: genus enim a rebus singulis *χωρίζεται* vel quod nos dicimus abstrahitur (Torst.). (Bonitz however, *Ind. Ar.* 539 a 38, classes this with other passages where *οὐ* or *μὴ* prefixed to a whole sentence negatives one particular word in it: he explains *μηδ' ἢ χωριστά* by *καὶ ἢ μὴ χωριστά*.) Some generalisation there must be in any science, and b 11 *τοιουδὶ, τοιαύτης* imply as much. Cf. *Metaph.* 1033 b 22 *ἀλλὰ τὸ τοιόνδε σημαίνει, τόδε δὲ καὶ ὁρισμένον οὐκ ἔστιν*, 981 a 10 *τοιούσδε κατ' εἶδος ἐν ἀφορισθεῖσι*, 1060 b 20 *τῶν καθόλου καὶ τοῦ τοιουδὶ dist. τόδε τι καὶ χωριστόν*. The force of the limiting *ἢ* with a negative prefixed can be easily understood from the following parallels, all from *Metaph.* M. 3: 1078 a 14 *οὐδτέρα γὰρ ἢ ὅψις ἢ ἢ φωνὴ θεωρεῖ*, a 26 *οὐθ' ἢ ἄνθρωπος οὐθ' ἢ ἀδιαίρετος, ἀλλ' ἢ στερεόν*, a 2 εἰ *συμβέβηκεν αἰσθητὰ εἶναι ὧν ἐστὶ [int. ἢ γεωμετρία], μὴ ἐστὶ δ' ἢ αἰσθητὰ*, "if the attribute of being perceptible by sense belongs to the objects with which geometry deals, but geometry does not deal with them *quā* perceptible by sense," 1077 b 22 *μὴ ἢ δὲ αἰσθητὰ, ἀλλ' ἢ τοιαδί*, b 28 *οὐχ ἢ κινούμενα, ἀλλ' ἢ σώματα μόνον*, b 19 *οὐχ ἢ δὲ τοιαῦτα*. Cf. also 1036 a 11 *νοητὴ δὲ [ὕλη] ἢ ἐν τοῖς αἰσθητοῖς ὑπάρχουσα μὴ ἢ αἰσθητὰ*.

b 10. *ἀλλ' ὁ φυσικός*. The relation of the clause beginning thus to the

preceding is, I think, misunderstood by Them. (8, 4—6 H., 14, 4—6 Sp.), Simpl. (22, 27—29), Trend. (p. 174), who interpret as if A.'s meaning were "no one, *except the physicist*, treats of the inseparable properties belonging to natural bodies and to sensible matter and treats them as inseparable: quae a materia separari non possunt (τὰ μὴ χωριστά, *Metaph.* 1026 a 19, 25 sqq.) ea sunt ipsa illa, quae physicus, qui qualis sit qualis corporis natura inquirat, exploranda sumit (Trend.). But Torstrik has shown a better way of taking the words τὰ μὴ χωριστά μὴδ' ἢ χωριστά: see last note. According to him, the physicist is excluded from this clause because, though dealing with τὰ μὴ χωριστά, he treats of them ἢ χωριστά when he generalises about them.

b 11. τοῦ τοιοῦδι σώματος καὶ τῆς τοιαύτης ὕλης. Of a body of the given kind and of the matter implied therein. Physics treats of bodies regarded as in motion or capable of motion: in order that they may be in this sense φυσικὰ σώματα they must have a certain kind of matter, viz. the matter conditioned by this requirement. Cf. *Metaph.* 1077 b 22—24, 30—32; *Phys.* II. 2, 193 b 35—194 a 15, 194 b 7—9, 9—13. It is owing to the contingent character of their matter that, strictly speaking, neither definition nor demonstration is applicable to particular physical substances: *Metaph.* 1039 b 27—31, 1036 a 2—9. The terms φυσικὸν σῶμα, φυσικὴ ὕλη (412 a 12, 403 b 17) convey no information, when the province of physics is what we are defining. All natural bodies can be described by such attributes as κινητόν, αἰσθητόν, ὑλικόν (cf. Bonitz ad *Metaph.* 1026 a 3). If any single adjective could replace τοιαύτης it would be κινήτης. Cf. *Metaph.* 1069 a 36 sq., 1036 a 10, 1026 a 12, 1026 a 2 sq. It must be wider than γεννητῆς καὶ φθαρτῆς, *Metaph.* 1042 b 5 sq., cf. 1069 b 25 sq. All natural bodies are self-moved or have in them an inherent principle of motion and rest (*De A.* 412 b 16 sq., *Metaph.* 1025 b 20 sq.); this serves to distinguish them from the products of art. From the objects of mathematics, again, they can be distinguished, in that, whereas the latter, e.g. the circle or the line, can be defined apart from the particular matter in which they are found, natural bodies are concrete of form and matter and incapable of definition apart from the particular matter belonging to them. A.'s favourite phrase for such a concrete thing is τόδε ἐν τῷδε, the particular form residing in particular matter, cf. 429 b 13 ἢ γὰρ σὰρξ οὐκ ἄνευ τῆς ὕλης, ἀλλ' ὥσπερ τὸ σιμόν, τόδε ἐν τῷδε. The matter as well as the form of flesh is relatively determinate. τὸ σιμόν is not τὸ κοῖλον wherever found, but only ἐν ῥυνί. The subject-matter of physics is less capable of independent existence than the subject-matter of mathematics, *Phys.* II. 2, 193 b 36 sq. τὰ γὰρ φυσικὰ χωρίζουσιν ἥττον ὅντα χωριστὰ τῶν μαθηματικῶν, as may be seen if we attempt to define either the subject-matter or its attributes in physics and in mathematics respectively. For the several mathematical objects will be defined as incapable of motion (i.e. change, ἔσται ἄνευ κινήσεως [i.e. ἀκίνητα]), but not so the objects of physics, 194 a 5 σὰρξ δὲ καὶ ὅσπου καὶ ἄνθρωπος οὐκέτι, ἀλλὰ ταῦτα ὥσπερ ῥίσι σιμῇ ἀλλ' οὐχ ὡς τὸ καμπύλον λέγεται. They are concrete things, like flesh and bone and man, and imply a particular matter as σιμότης implies ῥίσι. This is very clearly explained *Metaph.* 1025 b 28—1026 a 7: I will merely cite b 34 εἰ δὲ πάντα τὰ φυσικὰ ὁμοίως τῷ σιμῷ λέγονται, οἷον ῥίσι, ὀφθαλμός, πρόσωπον, σὰρξ, ὅσπου, ὅλως ζῶν, φύλλον, ῥίζα, φλοιός, ὅλως φυτόν, where the sentence beginning εἰ δὲ expresses the writer's own conviction. The fullest explanation of concrete things as τὰ οὐχ ἀπλὰ ἀλλὰ συνδεδασμένα is to be found *Metaph.* 1030 b 14—1031 a 14, 1032 a 20 ἅπαντα δὲ τὰ γινόμενα ἢ φύσει ἢ τέχνῃ ἔχει ὕλην· δυνατὸν γὰρ καὶ εἶναι καὶ μὴ εἶναι ἕκαστον αὐτῶν, τοῦτο δ' ἐστὶν ἢ ἐκάστω ὕλη. καθόλου δὲ καὶ ἐξ οὗ φύσις καὶ καθ' ὃ φύσις· τὸ γὰρ γινόμενον ἔχει φύσιν, οἷον φυτὸν ἢ

ζῶον· καὶ ὕφ' οὗ, ἡ κατὰ τὸ εἶδος λεγομένη φύσις ἡ ὁμοειδής· αὕτη δ' ἐν ἄλλῳ· ἄνθρωπος γὰρ ἄνθρωπον γεννᾷ. οὕτω μὲν οὖν γίνεσθαι τὰ γιγνόμενα διὰ τὴν φύσιν, 1034 a 5 τὸ δ' ἅπαν ἥδη τὸ τοιόνδε εἶδος ἐν ταῖσδε ταῖς σαρκὶ καὶ ὅστοις Καλλίας καὶ Σωκράτης· καὶ ἕτερον μὲν διὰ τὴν ὕλην, ἑτέρα γάρ, ταῦτό δὲ τῷ εἶδει· ἄτομον γὰρ τὸ εἶδος. Cf. 1036 b 3 οἷον τὸ τοῦ ἀνθρώπου εἶδος αἰεὶ ἐν σαρκὶ φαίνεται καὶ ὅστοις καὶ τοῖς τοιούτοις μέρεσιν· ἀρ' οὖν καὶ ἐστὶ ταῦτα μέρη τοῦ εἶδους καὶ τοῦ λόγου; ἡ οὐ, ἀλλ' ὕλη, ἀλλὰ διὰ τὸ μὴ καὶ ἐπ' ἄλλων ἐπιγίνεσθαι ἀδυνατούμεν χωρίσαι. ἐπεὶ δὲ τοῦτο δοκεῖ μὲν ἐνδέχασθαι, ἀδελφον δὲ πύτε, ἀποροῦσί τινες ἥδη καὶ ἐπὶ τοῦ κύκλου καὶ τοῦ τριγώνου, ὥς οὐ προσήκον γραμμαῖς ὀρίζεσθαι καὶ τῷ συνεχεῖ, ἀλλὰ πάντα ταῦτα ὁμοίως λέγεσθαι ὥσανεὶ σάρκες ἡ ὁστά τοῦ ἀνθρώπου καὶ χαλκὸς καὶ λίθος τοῦ ἀνδριάντος, 1035 a 1 εἰ οὖν ἐστὶ τὸ μὲν ὕλη τὸ δ' εἶδος τὸ δ' ἐκ τούτων, καὶ οὐσία ἡ τε ὕλη καὶ τὸ εἶδος καὶ τὸ ἐκ τούτων, ἔστι μὲν ὥς καὶ ἡ ὕλη μέρος τινὸς λέγεται, ἔστι δ' ὥς οὐ, ἀλλ' ἐξ ὧν ὁ τοῦ εἶδους λόγος. οἷον τῆς μὲν κοιλότητος οὐκ ἔστι μέρος ἡ σὰρξ (αὕτη γὰρ ἡ ὕλη ἐφ' ἧς γίνεσθαι), τῆς δὲ σιμότητος μέρος (sc. ἡ σὰρξ), *ib.* 25—28 ὅσα μὲν οὖν συνειλημμένα τὸ εἶδος καὶ ἡ ὕλη ἐστίν, οἷον τὸ σιμὸν ἡ ὁ χαλκοῦς κύκλος, ταῦτα μὲν φθείρεται εἰς ταῦτα καὶ μέρος αὐτῶν ἡ ὕλη, 1036 b 22 διὸ καὶ τὸ πάντ' ἀνάγειν οὕτω καὶ ἀφαίρειν τὴν ὕλην περιεργον· ἔνια γὰρ ὥσας τὸδ' ἐν τῷδ' ἐστίν, ἡ ὡδὶ ταδὶ ἔχοντα, *ib.* 28 αἰσθητὸν γάρ τι τὸ ζῶον, καὶ ἄνευ κινήσεως οὐκ ἔστιν ὀρίσασθαι, διὸ οὐδ' ἄνευ τῶν μερῶν ἐχόντων πως.

b 12. ὅσα δὲ μὴ ἡ τοιαῦτα, i.e. ὅσα δὲ μὴ θεωρεῖται ἡ τοῦ τοιουδὲ σώματος καὶ τῆς τοιαύτης ὕλης ἔργα καὶ πάθη. Legebatur [apud Bekkerum et Trend.] ὅπόσα δὲ μὴ ἡ τοιαῦτα: scripsimus ὅσα δὲ μὴ ἡ τοιαῦτα, et ὅσα quidem ex codice E, ἡ vero ex Simplicio: (22, 30), μὴ ἡ τοιαῦτα, τουτέστι μὴ ἡ χωριστά: quae interpretatio, etsi falsa est, de eo quod legerit Simplicius dubitationem non relinquit. Ceterum e scriptura unciali HI modo ἡ modo ἡ factum est (Torst.). The text of Simpl., as given by Hayduck, is (22, 30): ὅπόσα δὲ μὴ ἡ τοιαῦτα, ἄλλος] τουτέστι μὴ ἡ ἀχώριστα, ἀλλ' ὥς χωριστά, ἄλλος, but this does not affect Torst.'s argument.

b 13. περὶ τινῶν μὲν. Philoponus 64, 2 sq. and Sophonias 9, 3 explain τινῶν as particulars and Torstrik inclined to the same view, though he was aware that, to make this meaning clear, the article τῶν before τινῶν is required. There seems no reason why παθῶν should not be understood. It is quite true that the physician is concerned with the individual patient (*Metaph.* 981 a 15—24), but it is also true that health and disease are accidents, not essential properties, of a natural body, and the physician studies them solely in order that he may substitute health for disease. Hence in his case τινῶν=such as can be produced by νοῦς, τέχνη or δύναμις and not, unless it be ἀπὸ ταυτομάτου, by matter left to itself (*Metaph.* 1032 b 21—26). Similarly with the carpenter, but the properties which he seeks to impart to his materials are even more plainly adventitious and artificial, such as could not have been even spontaneously produced. Cf. *Metaph.* Z., c. 9 throughout, also c. 7, especially 1032 a 32—b 26, Them. 8, 11—17 H., 14, 13—22 Sp. The close connexion between the practical science of medicine and theoretical physics is emphasised *De Sensu* 1. 436 a 27—b 1. τεχνίτης apparently represents any of the constructive arts and sciences in which human intelligence, imitating nature, works for an end. See note on 406 a 14.

b 14. τῶν δὲ μὴ χωριστῶν μὲν, sc. παθῶν: the genitive being, like b 13 τινῶν, governed by περὶ: or possibly, the preposition being forgotten, the genitive is simply one of relation. That none of the objects of mathematics have independent existence is fully established *Metaph.* M., cc. 2, 3. Cf. 431 b 15 τὰ μαθηματικὰ οὐ κεχωρισμένα ὥς κεχωρισμένα νοεῖ. ἡ δὲ μὴ τοιούτου σώματος, but not considered as properties of the concrete body to which they belong. Before the mathematician can treat of them he must by abstraction separate

them from their concrete surroundings. It matters not whether the sphere be made of brass or of some other material, nor what its size or its position, *Metaph.* 1036 a 31—b 3. Hence the objects of mathematics, e.g. the geometer's circles and spheres, are not sensible but intelligible objects: that is, though they have matter, it is intelligible and not sensible matter, *Metaph.* 1036 a 2—12, 1036 b 32—1037 a 5: νοητὴ ὕλη=ἡ ἐν τοῖς αἰσθητοῖς ὑπάρχουσα μὴ ᾗ αἰσθητά, οἷον τὰ μαθηματικά (1036 a 11), quae, licet sit in rebus sensibilibus, tamen non eatenus in iis est, quatenus sunt sensibiles (Bonitz *ad loc.*), e.g. quantity and extension, ποσὸν and συνεχές. Thus the geometer's circle and sphere cease to be objects of physics, whereas the circle or sphere in brass is a natural body which both physicist and artist study, but under different aspects: and, as with every other such body, its notion or definition must take into account its particular matter, *Metaph.* 1033 a 4 ὁ δὲ χαλκοῦς κύκλος ἔχει ἐν τῷ λόγῳ τὴν ὕλην. Contrast the definition of the sphere given by the geometer 1033 b 14 τὸ ἐκ τοῦ μέσου σχῆμα ἴσον, which ignores sensible matter.

b 15. ἐξ ἀφαιρέσεως. *Ind. Ar.* 126 b 16 ἀφαίρεσις 'abstractio logica.' τὰ ἐξ ἀφαιρέσεως λεγόμενα, eae notionis cuiusque partes, quae cogitatione separari possunt (Waitz). Ita praecipue res mathematicae significantur. *De Cael.* III. 1, 299 a 15 τὰ μὲν ἐξ ἀφαιρέσεως λέγεσθαι τὰ μαθηματικά, τὰ δὲ φυσικά ἐκ προσθέσεως, *Metaph.* 1061 a 28—b 3. See Bonitz *ad Metaph.* 982 a 27. Cf. *De A.* 429 b 18 sq., 431 b 12 sqq., 432 a 5 sq., where τὰ ἐν ἀφαιρέσει ὄντα (λεγόμενα) are the objects of mathematics. The opposite of ἐξ ἀφαιρέσεως is ἐκ προσθέσεως, *Metaph.* 1077 b 10 ἐκ προσθέσεως γὰρ τῷ λευκῷ ὁ λευκὸς ἄνθρωπος λέγεται, for by determination, through white, arises the concept of "white man." See Bonitz *ad loc.* (p. 533): per τὸ λευκόν, quod additur ad hominem, exsistit homo albus. By ἐξ, "in consequence of," is expressed the process by which the abstract notion is attained: we take away or leave out of account certain marks or attributes and fix attention upon those which remain, e.g. the geometer disregards all sensible properties, weight, hardness, heat, etc. and regards the things with which he is dealing solely as quantities and as continuous (1061 a 32 μόνον δὲ καταλείπει τὸ ποσὸν καὶ συνεχές) and investigates solely the properties that belong to them as such (καὶ τὰ πάθη τὰ τούτων ἢ ποσὰ ἐστὶ καὶ συνεχῆ, καὶ οὐ καθ' ἑτερόν τι θεωρεῖ).

b 15. ἢ δὲ κεχωρισμένα, so far as they have a separate existence παρὰ τὰ καθ' ἑκάστα, παρὰ τὰς αἰσθητὰς οὐσίας. Cf. 431 b 18 τῶν κεχωρισμένων τι, *Metaph.* 1026 a 16 ἢ δὲ πρώτη [φιλοσοφία] καὶ περὶ χωριστὰ καὶ ἀκίνητα. Cf. 1026 a 27—30 εἰ μὲν οὖν μὴ ἐστί τις ἑτέρα οὐσία παρὰ τὰς φύσει συνεστηκυῖας ἢ φυσικὴ ἂν εἴη πρώτη ἐπιστήμη. εἰ δ' ἐστί τις οὐσία ἀκίνητος, αὕτη προτέρα καὶ φιλοσοφία πρώτη. In *Metaph.* 996 a 15 κεχωρισμένοι τῶν αἰσθητῶν and ἐνυπάρχουσαι ἐν τούτοις are alternative and mutually exclusive determinations of οὐσία as applied to mathematics. *Metaph.* 1039 a 7 ἢ γὰρ ἐντελέχεια χωρίζει. Hence that of which First Philosophy treats is ἐντελέχεια ὄν or rather ἐντελέχεια (cf. *Metaph.* 1074 a 33 ἀλλ' ὅσα ἀριθμῷ πολλὰ, ὕλην ἔχει. εἰς γὰρ λόγος καὶ ὁ αὐτὸς πολλῶν... τὸ δὲ τί ἦν εἶναι οὐκ ἔχει ὕλην τὸ πᾶν... ἐντελέχεια γάρ), whereas of sensible substance we are told 1040 b 5 τῶν δοκουσῶν εἶναι οὐσιῶν αἱ πλείους δυνάμεις εἰσὶ, τὰ τε μόρια τῶν ζῶων (οὐδὲν γὰρ κεχωρισμένον αὐτῶν ἐστίν· ὅταν δὲ χωρισθῇ, καὶ τότε ὄντα ὡς ὕλη πάντα, καὶ γῆ καὶ πῦρ καὶ ἀήρ κτέ.). In 1041 a 8 First Philosophy is said to be περὶ ἐκείνης τῆς οὐσίας ἣτις ἐστὶ κεχωρισμένη τῶν αἰσθητῶν οὐσιῶν, i.e. ἡ ἀκίνητος οὐσία of Δ., cc. 6—10, cf. 1069 a 33, 1073 a 22—b 3, also 1041 a 9—11, 27—31.

b 16. ἐπανιτέον. Cf. *Eth. Nic.* 1100 a 31 ἀλλ' ἐπανιτέον ἐπὶ τὸ πρότερον ἀπορρηθέν. Similarly *Metaph.* 993 a 26 ἐπανέλθωμεν πάλιν, 1038 b 1, *Eth. Nic.* 1097 a 15.

b 16. ὅθεν ὁ λόγος, sc. μετέβη probably. The words recur *Metaφh.* 1000 b 9. Cf. *Eth. Nic.* 1097 a 24 μεταβαίνων δὴ ὁ λόγος εἰς ταῦτόν ἀφίκεται, 1144 b 25 sq., *Pol.* 1335 a 4 ὅθεν ἀρχόμενοι δεῦρο μετέβημεν, 1284 b 35. Similarly Plato *saepe*, e.g. *Crat.* 438 A ἐπανέλωμεν δὴ πάλιν ὅθεν δεῦρο μετέβημεν. The point from which the digression started would seem to be 403 b 9, but it may be the first introduction of ὁ φυσικός 403 a 27. At all events A. re-states somewhat more explicitly his proposition 403 a 25 τὰ πάθη λόγοι ἔνυλοι εἶσιν.

b 17 τὰ πάθη...18 ζῶων. The verb to be supplied is probably ὑπάρχει, πάθος εἶναι (τῆς ψυχῆς) being equivalent to (τῇ ψυχῇ) ὑπάρχειν. The precise meaning of ἀχώριστα is defined by the clause b 19 καὶ οὐχ...ἐπίπεδον, "inseparable and yet not in the same way as line and surface are inseparable": that is, while the affections of the soul are inseparable [belong to it as inseparable] from the animal body, at the same time they do not belong to it as mathematical objects, line and surface, belong to their ὑποκείμενα (viz. the sensible things from which, though inseparable in fact, they are abstracted in thought). This qualification is necessary, because above (403 a 12—17) the affections of the soul were, for a special purpose, compared with the straight line as being inseparable from body. The fuller discussion which follows and the digression (403 a 27—b 16) have shown that this is not the whole account of the matter, and that the physicist's treatment of soul differs from the mathematician's treatment of line and surface. By τῆς φυσικῆς ὕλης τῶν ζῶων is meant the body of the animal. Cf. 403 a 16 πάντα εἶναι μετὰ σώματος, 403 b 3 ἐν ὕλῃ τοιαυτῇ, b 11 ἀπανθ' ὅσα τοῦ τοιούτου σώματος καὶ τῆς τοιαύτης ὕλης. It might be glossed by τῆς αἰσθητῆς ὕλης. So *Them.* 8, 33 H., 15, 14 Sp. ἐλέγομεν δὲ ὅτι τὰ πάθη τῆς ψυχῆς ἀχώριστα τῆς φυσικῆς ὕλης τῶν ζῶων ἐστί, καὶ οὐχ ὥσπερ γραμμὴν καὶ ἐπίπεδον τῷ λόγῳ δυνατόν ἀποστήσαι τῆς ὑποκειμένης ὕλης, οὕτω καὶ θυμὸν καὶ φόβον, ἀλλὰ δεῖ τοὺς ὅρους τούτους συμπλέκεσθαι τοῖς παθήμασι τοῦ σώματος, *Simpl.* 23, 18—30. As to the text, I am not satisfied to follow E blindly (see critical notes): οὔτε followed by καὶ οὐκ seems very questionable. In ἀχώριστα we have the general sense, even if the precise form of the sentence cannot be recovered. My own suggestion οὔτε...οὔτε...καὶ οὐχ is not very unlike *De Part. An.* IV. 14, 697 b 16 ὥς οὐκ ὦν ὄρνις οὔτε πέταται μετεωριζόμενος, καὶ τὰ πέρα οὐ χρῆσιμα πρὸς πτήσιν.

b 18. ἡ δὴ τοιαυτὴ ὑπάρχει, θυμὸς καὶ φόβος. These words tend to define the affections of the soul and might perhaps have been introduced immediately after b 17 τῆς ψυχῆς. The expression is unusually precise and full. But cf. *Metaφh.* 1078 a 5 πολλὰ δὲ συμβέβηκε καθ' αὐτὰ τοῖς πράγμασιν ἡ ἕκαστον ὑπάρχει τῶν τοιούτων, ἐπεὶ καὶ ἡ θῆλυ τὸ ζῶον καὶ ἡ ἄρρεν, ἴδια πάθη ἐστίν. A. is more often content to omit the verb as above 403 a 12 sq., b 10 ἡ χωριστά, b 12 ἡ τοιαῦτα and elsewhere τὸ ὄν ἡ ὄν, τὸ ἄπειρον ἡ ἀπειρον. *Pol.* 1275 a 37 οὐδὲν ἐστίν, ἡ τοιαῦτα, τὸ κοινόν. For ἡ δὴ *Simplicius* reads ἡ γε and this is the reading of U, but δὴ, in Eucken's words: vim relati tantum arguet 'welcher eben,' 'welcher gerade.' Cf. *Eth. Nic.* 1158 a 10 ἀ δὴ μάστιγ' εἶναι δοκεῖ φιλική, *Metaφh.* 1032 a 19, 986 a 13 ἀλλ' οὐδὲ δὴ χάριν ἐπερχόμεθα, 1000 b 9 ἀλλ' ὅθεν δὴ ὁ λόγος, τοῦτό γε φανερόν, where δὴ and γε each have their proper meaning: *Pol.* 1278 b 38, 1295 b 36 sq., with Newman's notes; Eucken *De Part. Usu*, p. 43. θυμὸς καὶ φόβος recall the longer list a 17, 18 from which they are taken as typical instances. They stand here exactly as they stood there in apposition to τὰ πάθη. *Simplicius* 23, 24 explains the words thus: τὰ τοιαῦτα πάθη, θυμὸν λέγων καὶ φόβον καὶ τὰ ὅμοια, ἀ μὴδὲ ἐξ ἀφαιρέσεως, ὥσπερ γραμμὴ καὶ ἐπίπεδον, ἐπινοεῖσθαι δύναται ἄνευ τῆς ὕλης, ὥς καθὼ τοιαῦτα συνεφελκόμενα τὴν ὕλην, καὶ οὐχ ὥσπερ τὸ ἐπίπεδον ἄνευ τοῦ χαλκοῦ καὶ ὅλως τοῦ ἀντιτύπου. τὸ μὲν γὰρ

ἐπίπεδον ὡς τὸ κοῖλον ἔχει ἄνευ ῥῖνός ἐπινοούμενον, ὁ δὲ θυμός ὡς τὸ σιμόν· τὸ γὰρ σιμόν ἢ ἐν ῥῖνι κοιλότης, ὡς ἡ ὀργὴ ὀρεξίς ἀντιληψέως ἐν τῇ ζήσει τοῦ περὶ καρδίαν αἵματος.

b 19. καὶ οὐχ...ἐπίπεδον. Has affectiones a corpore separari non posse, (ait A.) nec tamen ut lineam et planum sese habere; quae quidem ubi exstant, materiae adhaerent, sed quarum natura, materia posthabita (ἐξ ἀφαιρέσεως) mente quasi ab oculis revocata, cognoscitur: in illarum affectionum vi et natura corpus in numerum venire (Trend.). The inseparable matter in which his objects are presented to the mathematician is wholly indifferent, whether e.g. the line is drawn in sand, or presented as the edge of a brass ruler. But to the biologist the particular sensible matter is all-important: that of which he treats is analogous to σιμόν not to κοῖλον. Alter the matter, and a hand or an eye in marble or wood ceases to be a hand or eye at all except equivocally (δμωνύμως); the ἔργα καὶ πάθη of soul can only be studied in living animals when ἅμα τούτοις πάσχει τι τὸ σῶμα. Mr Shorey neatly sums up as follows (*A. J. Ph.* Vol. XXII. p. 152): "The πάθη, *qua* such; i.e. *qua*, e.g. θυμός and φόβος, are ἀχώριστα, inseparable even in thought from their material embodiment, and not like the line which, *qua* line, is separable in thought from physical matter."

## CHAPTER II.

The first chapter has introduced to our notice in a somewhat tentative and summary fashion the problems and the method of psychology as conceived by A. Before going on to his own exposition, he devotes the remainder of the first book to a review and criticism of the received opinions on the subject. Such a critical review forms a part of many Aristotelian treatises, the best known instances being the first book of the *Metaphysics* and the second book of the *Politics*, and is often of the highest value alike for the information given as to the views of other philosophers and for the insight thus afforded into the foundations of his own constructive theory and the interdependence of its parts. In a subject so obscure and difficult as the present it is not to be expected that much can be gathered from the general body of current opinions usually designated ἐνδοξα, to which he frequently appeals in a popular treatise like the *Nicomachean Ethics* (403 b 25 sq., 29 sq., 404 b 17, 28, 405 a 28, b 25, 26 sqq.). Even citations from the poets and remarks of men eminent in other departments of life yield very little (404 a 29 sq., 410 b 27 sq., 411 a 8). The opinions stated and criticised belong almost without exception to the philosophic schools of his predecessors. The great physicists of the fifth century—Democritus, Empedocles, Anaxagoras,—on the one hand, and on the other Platonism as presented in the *Timaeus*, and again as taught by A.'s own fellow-pupil and personal friend Xenocrates in the contemporary Academy, receive the fullest treatment, while the theory of harmony, familiar to us from the pages of the *Phaedo*, a theory which at first sight bears a remarkable likeness to that of the entelechy, is also singled out for discussion and refutation (407 b 27 sqq.). Slight attention is bestowed upon other thinkers: certain Pythagoreans (404 a 18), Thales (405 a 19), Diogenes of Apollonia (405 a 21), Heraclitus (405 a 25), Alcmaeon (405 a 29), Hippon (405 b 2), Kritias (405 b 6): but their contributions are obviously regarded as unimportant by comparison, and even the claim of Alcmaeon, Hippon, and Kritias to rank as philosophers is doubtful.

A. makes some attempt to classify the divergent theories before him (403 b 25 sqq., 405 b 11, 409 b 19). Starting with the common opinion that both the motion and the perception of living creatures are due to soul, the various theories may roughly be classified according as they emphasise the one or the other of these functions. In the former case, soul is described as the most mobile of things, as by the Atomists, who identified it with heat, both fire and soul owing their mobility to the small size and spherical shape of their component atoms. If, however, perception and knowledge be taken as the pre-eminent functions of soul, and if it be further admitted that like knows like, it follows that soul is a compound of the elements which go to make the world. Under these two heads (1) the most mobile substance and (2) the primary element or (if there be more than one such) a compound of the primary elements, there is room for a wide diversity of opinions, for the most mobile substance may be taken to be material, e.g. fire, or immaterial, e.g. a self-moving number, whilst both the number and nature of the primary element or elements has been notoriously open to discussion. There is no general agreement whether they are one or many, corporeal or incorporeal. Sometimes the two views are combined. Sometimes the substance declared to be soul would seem to have been selected because of the fineness of its particles, so that, if not indeed actually incorporeal, it would appear such in comparison with grosser matter. Hence we have another head (3) the incorporeal, and virtually incorporeal. As a general rule, there is a close affinity between the views of various philosophers regarding the elements of the universe and the composition of the soul. In this respect, however, Anaxagoras forms a notable exception.

In c. 2 A.'s attitude is for the most part expository, except that in 405 b 19—23 an objection is raised to the theory of Anaxagoras. The fact is that he is in partial sympathy with the views expressed under each of the three main heads under which he arranges his predecessors. He holds that soul is (1) *κίνητικόν*, (2) *γνωριστικόν*, and (3) *ἀσώματον*. His quarrel is with the one-sided way in which these various characteristics of soul have been presented and with the inadequacy of all the formulae hitherto devised for their expression. Thus as regards (1) he agrees that soul is *κίνητικόν* but denies that it is *κινούμενον* (see c. 3); as regards (2) he combats the inference that, because soul is that which knows, it must therefore be compounded of the elements of the things which it knows (see 409 b 19 sqq.). Similarly the theories which at first sight would seem to make the soul incorporeal are found upon examination (see I. c. 4) to be vague or inconclusive. For contributions to a better understanding of A.'s own positive view we may refer to other later criticisms, e.g. 407 b 13, 408 a 34—b 29, 411 a 24 sqq.

**403 b 20—404 b 8.** Introduction to the critical review of previous opinions on the subject. Motion and perception, the primary characteristics of living things, have been taken to be the primary characteristics of soul, and motion has been taken to imply mobility (§ 1—2) e.g. by Democritus and Leucippus (§ 3), by certain Pythagoreans (§ 4), and by Anaxagoras. But there is a difference between Democritus and Anaxagoras. The former identifies intelligence with life, *νοῦς* with *ψυχή*, the latter is not so clear. He appears sometimes to distinguish them, as when he makes intelligence the final cause of the universe, sometimes to confound them, as when he attributes intelligence to even the humblest of living things (§ 5).

The important part which the conception of motion played in all previous speculation is fully recognised by A. Among other passages we may refer to *Phys.* VIII. 9, 265 b 17—266 a 5. There he starts with the remark that all who



have treated of motion (*κίνησις*) agree in considering spatial motion, *φορά*, as the primary motion. Their first principles are causes of spatial motion. This is exemplified by those who explained qualitative change by means of combination and separation (probably the Ionians), by Empedocles, whose Love and Strife bring about motion in space, and by Anaxagoras and by the Atomists. The other kinds of change (*κίνησις*) they attribute not to the primary elements or principles of things, but to the compounds to which they give rise. So, too, with those who introduce condensation and rarefaction to explain change. A. then continues 265 b 32 *ἔτι δὲ παρὰ τούτους οἱ τὴν ψυχὴν αἰτίαν ποιούντες κινήσεως· τὸ γὰρ αὐτὸ ἑαυτὸ κινεῖν ἀρχὴν εἶναι φασὶ τῶν κινουμένων, κινεῖ δὲ τὸ ζῶον καὶ πᾶν τὸ ἔμφυχον τὴν κατὰ τόπον ἑαυτὸ κίνησιν. καὶ κυρίως δὲ κινεῖσθαι φασιν μόνον τὸ κινούμενον κατὰ τόπον· ἂν δ' ἡρεμῇ μὲν ἐν τῷ αὐτῷ, αὐξάνηται δ' ἢ φθίνη ἢ ἀλλοιούμενον τυγχάνη, πῇ κινεῖσθαι, ἀπλῶς δὲ κινεῖσθαι οὐ φασιν.* "And so, again, with those who make the soul the cause of movement. For they say that the self-movement gives rise to motion in things which are moved. The animal and indeed every thing which has life moves itself with local movement. And movement in the proper sense of the term denotes only local movement. If a thing, while remaining at rest in the same place, grows or decays or undergoes qualitative change [i.e. by sense-perception], we say that it moves in a certain respect, but not that it moves absolutely."

b 20 *ἅμα διαπορούντας... 22 συμπαραλαμβάνειν.* Properly *διαπορεῖν* = *διέρχεσθαι τὰς ἀπορίας*, *Ind. Ar.* 187 b 11. It is one of A.'s canons that the complete enumeration of difficulties is an indispensable preliminary to their solution. The implication is, not only must we state the problems but we must also take into consideration the attempts of our predecessors to solve them. The problems have been stated 402 a 23 sqq. The review of previous opinions goes on to the end of the book. In the *Metaphysics*, the first book contains the review of previous speculation, while a comprehensive statement of *ἀπορίαι* follows in Book III (B). The most explicit account of this procedure by stating received opinions and discussing difficulties is found in *Eth. Nic.* 1145 b 2 *δεῖ δ', ὥσπερ ἐπὶ τῶν ἄλλων, τιθέντας τὰ φαινόμενα καὶ πρῶτον διαπορήσαντας οὕτω δεικνύναι μάλιστα μὲν πάντα τὰ ἐνδοξα περὶ ταῦτα τὰ πάθη, εἰ δὲ μή, τὰ πλείστα καὶ κυριώτατα· ἐὰν γὰρ λύηται τε τὰ δυσχερῆ καὶ καταλείπηται τὰ ἐνδοξα, δεδειγμένον ἂν εἴη ἱκανῶς.* Cf. *De Cael.* II. 13, 294 b 6—13. For *εὐπορεῖν* cf. *Μεταφρ.* 993 a 25—27 and especially 995 a 27—b 4. *συμπαραλαμβάνειν* i.e. (Them. 8, 39 H., 15, 22 Sp.) *κοινωνοὺς συμπαραλαβεῖν εἰς σκέψιν.* Cf. *Μεταφρ.* 987 a 2 *ἐκ μὲν οὖν τῶν εἰρημένων καὶ παρὰ τῶν συνηδρευκότων ἥδη τῷ λόγῳ σοφῶν τοσαῦτα παρειλήφαμεν.*

b 23. *ὅπως τὰ μὲν καλῶς εἰρημένα κτέ.* This statement of the end in view is almost stereotyped. Cf. *Pol.* 1260 b 32 sqq. *ἵνα τό τ' ὁρθῶς ἔχον ὀφθῇ καὶ τὸ χρησίμον, ἔτι δὲ τὸ ζητεῖν τι παρ' αὐτὰς ἔτερον μὴ δοκῇ πάντως εἶναι σοφίζεσθαι βουλομένων, ἀλλὰ διὰ τὸ μὴ καλῶς ἔχων ταύτας τὰς νῦν ὑπαρχούσας [sc. πολιτείας], διὰ τοῦτο ταύτην δοκῶμεν ἐπιβαλέσθαι τὴν μέθοδον, Μεταφρ.* 983 b 1 *ὅμως δὲ παραλάβωμεν καὶ τοὺς πρότερον ἡμῶν εἰς ἐπίσκεψιν τῶν ὄντων ἐλθόντας... b 5 ἡ γὰρ ἔτερόν τι γένος εὐρήσομεν αἰτίας, ἡ ταῖς νῦν λεγομέναις μᾶλλον πιστεύσομεν (cf. 993 a 11 sqq., 1073 b 10—17).* *εἰ δέ τι μὴ καλῶς, sc. εἴρηται.*

b 24. *ἀρχὴ δὲ τῆς ζητήσεως, sc. ἐστί.* A more impersonal mode of statement than "we begin," cf. *Pol.* 1274 b 32 *τῷ περὶ πολιτείας ἐπισκοποῦντι... σχεδὸν πρώτη σκέψις περὶ πόλεως ἰδεῖν*, 1325 b 35 *ἀρχὴ τῶν λοιπῶν εἰπεῖν, De Long. Vit.* 464 b 21 *ἀρχὴ δὲ τῆς σκέψεως ἀναγκαῖα πρῶτον ἐκ τοῦ διαπορῆσαι περὶ αὐτῶν.*

b 25. *τὰ μάλιστα δοκοῦνθ' ὑπάρχειν αὐτῇ κατὰ φύσιν.* By what is called

hyperbaton *μάλιστα* has been separated from *κατὰ φύσιν ὑπάρχειν* with which it is to be taken and prefixed to *δοκοῦντα* with which it has nothing to do. Cf. for another glaring instance *τὴν κατὰ τόπον αὐτὸ κίνησιν*, *Phys.* 266 a 1 cited p. 211 *supra*. This constantly recurring idiom Mr Newman explains (see his *Politics*, Vol. III. p. 579) as intended to emphasise the words thus separated from their natural place. But sound had always more to do than sense with this trick of style: its inventor, Isocrates, used it as one means of avoiding a harsh collision of vowels. The natural attributes of soul must be regarded as identical with (402 a 8) *ὅσα συμβέβηκε περὶ αὐτήν*, some of which we were told (402 a 9) *δὲ ἐκείνην [δοκεῖ] καὶ τοῖς ζώοις ὑπάρχειν*. Adventitious attributes are excluded by *κατὰ φύσιν*, just as they are when *καθ' αὐτὸ* is added to *συμβαίνειν*.

b 25 *τὸ ἔμψυχον...26 δοκεῖ*. This is an *ἔνδοξον*, or prevalent opinion. The method of comparing *ἔμψυχον* and *ἄψυχον* A. himself adopts 413 a 20 sqq. Popular opinion had seized upon two characteristics of animate beings, overlooking or confusing with them others which A. distinguishes l.c., as e.g. nutrition and intelligence.

b 26. *κίνησει τε καὶ τῷ αἰσθάνεσθαι*. Though inadequate, this opinion receives some countenance from A. himself: see 427 a 17 sqq. and 432 a 15 sqq. From the former passage it appears how vaguely *τὸ αἰσθάνεσθαι* was construed, since, as A. remarks in the sequel, the upholders of this view make thought a species of perception. In III. 9 *loc. cit.* only *ἡ ψυχὴ ἢ τῶν ζώων* is in question, to the exclusion of that of plants.

b 28. *σχεδὸν δύο ταῦτα*, "approximately these two characteristics," i.e. *κίνησις* and *τὸ αἰσθάνεσθαι*, which represent, more or less precisely, the qualities distinctive of soul in the view of the earlier thinkers. For the addition of *τὸ ἀσώματον* see below 405 b 11 sq., 409 b 20 sq.

b 29. *καὶ μάλιστα καὶ πρώτως*. *Ind. Ar.* 652 b 33 *voc. πρώτος, πρώτως usus philosophicus latissimum habet ambitum...* (653 a 27) *syn κυρίως, ἀπλῶς, καθ' αὐτό, significat ipsam per se rei notionem et naturam (ut quae iam a principio sit et rem constituat)*. *Metaph.* 1030 b 5 *ὁ πρώτως καὶ ἀπλῶς ὁρισμός*, 1031 a 14 *τὸ τί ἦν εἶναι τῶν οὐσιῶν ἐστὶν μάλιστα καὶ πρώτως καὶ ἀπλῶς*, *Categ.* 5, 2 a 11 *οὐσία δὲ ἐστὶν ἡ κυριώτατά τε καὶ πρώτως καὶ μάλιστα λεγομένη*, *Eth. Nic.* 1157 a 30 *φιλία πρώτως καὶ κυρίως dist. καθ' ὁμοίτητα*, cf. Bz. ad *Metaph.* 1015 b 11. Thus *πρώτως* emphasises the primary notion of soul, the original meaning of the term; its first and foremost characteristic is that it is the movent. There is an interesting note by A. himself on the application of *πρώτος* and *πρώτως* to motion in *Phys.* VIII. 7, 260 b 16—19. Of the three meanings of priority there given—(1) ontological independence or self-dependence, (2) temporal, and (3) logical priority—the last seems best to suit *πρώτως* here.

b 29 *οληθέντες δὲ...30 κινεῖν ἕτερον*. That the power to originate motion in something else belonged exclusively to objects which themselves move was another prevalent opinion which appears in various forms among the early philosophers. Cf. e.g. *infra* 405 a 24 *ἢ δὲ λεπτότατον, κινητικὸν εἶναι*. That A. holds this view we shall see in the next chapter.

b 31 *ὅθεν Δημόκριτος μὲν...404 a 1 αὐτὴν εἶναι*. There seems nothing to answer *μὲν* until we come to 404 a 16 *ἔοικε δὲ*, for 404 a 5 (*ὁμοίως δὲ καὶ Δεύκιππος*) is parenthetical. We have no means of checking this statement, for A. is our oldest and most credible authority for this as for most of the opinions of the Atomists. The more precise definition of later writers (see Diels, *Doxographi Graeci*, p. 388) is derived ultimately from A.'s pupil Theophrastus. Observe that there are two statements here: (a) that Democritus identified soul with fire or warmth, (b) that his reason for doing so was the mobility of the

atoms of which fire or warmth consists. A. repeats both statements *infra* 405 a 8—13. See note on 406 b 20 sqq. On A.'s criticisms of Democritus generally cf. Lasswitz, *Geschichte der Atomistik* I., Dyroff, *Demokritstudien*; for D.'s psychology Hart, *Seelenlehre des Demokrits*; for his theory of cognition Natorp, *Erkenntnisproblem*, and for his theory of matter Bäumker, *Problem der Materie*.

404 a 1 πῦρ τι καὶ θερμόν.....2 τὰ σφαιροειδῆ.....4 ἀκτίσιν, ὧν.....5 λέγει. The suspicions of Madvig were first excited by 404 a 2 τὰ σφαιροειδῆ πῦρ καὶ ψυχὴν λέγει, which he bracketed as well as a 4 ὧν. This left the comparison of atoms with motes untouched. Diels, *Fragmente der Vorsokr.* p. 363, 18 regards the whole of the passage a 2 τὰ σφαιροειδῆ—a 4 ἀκτίσιν, ὧν as an interpolation: "Die antike Glosse τὰ σφαιροειδῆ—ἀκτίσιν benutzt das a 17 folgende Beispiel der ξύσματα." It must be granted that the omission of this as an intruding gloss or marginal summary relieves the construction considerably. As the traditional text stands, it is just possible to extract a grammatical sense if by a 4 ὧν we understand σχημάτων not ξυσμάτων. But a 5 τούτων δὲ also refers to the atoms. This is not surprising, the introduction of the parenthetical sentence (a 5) ὁμοίως δὲ καὶ Δεύκιππος having interrupted the regular course of the sentence which might otherwise have run ὧν τὴν μὲν πανσπερμίαν...λέγει, τὰ δὲ σφαιροειδῆ ψυχὴν. Here at any rate μὲν and δὲ present an antithesis between atoms in general and spherical soul-atoms in particular, which is destroyed if with M. Rodier we refer ὧν on strictly grammatical grounds to a 3 τὰ καλούμενα ξύσματα or a 2 τὰ σφαιροειδῆ (τῶν ἀτόμων). Themistius (9, 9 H., 16, 6 Sp.) with his usual insight has selected the essential clauses in this rambling parenthetical sentence and re-arranged them thus: ὅθεν Δημόκριτος πῦρ καὶ θερμόν φησι τὴν ψυχὴν· ἀπείρων γὰρ ὄντων τῶν σχημάτων ἅ ταῖς ἀτόμοις προστίθῃσι, τὴν μὲν πανσπερμίαν αὐτῶν στοιχεῖα ποιεῖ τῆς ὅλης φύσεως, τούτων δὲ τὰ σφαιροειδῆ τῆς ψυχῆς κτέ. But his further remarks prove that he, like the other Greek commentators, had the simile of the motes in his text and probably in its traditional place. The repetitions (a 2, 6) and the parentheses (a 3—4, a 5) can be paralleled in other passages where A. is writing carelessly. It is not imperative that anything should be sacrificed, for even against ὧν the case is by no means clear. Themistius inserts αὐτῶν after τὴν πανσπερμίαν although ἀπείρων γὰρ ὄντων τῶν σχημάτων has preceded.

404 a 1. ἀπείρων, "unlimited," i.e. infinite in number and in variety of shapes. Cf. *De Sensu* 4, 442 b 21, *De Cael.* III. 4, 303 a 5 πλῆθει μὲν ἄπειρα, *De Gen. et Corr.* I. 1, 314 a 21 Δημόκριτος δὲ καὶ Δεύκιππος ἐκ σωμάτων ἀδιαιρέτων τὰλλα συγκείσθαι φασι. ταῦτα δ' ἄπειρα καὶ τὸ πλῆθος εἶναι καὶ τὰς μορφάς. Here (404 a 1) the latter seems emphasised.

a 2. σχημάτων καὶ ἀτόμων, "shapes or atoms," καί, as often, being explanatory. Sometimes A. calls the infinitesimal solids of the Atomists σχήματα, i.e. things which have figure, σχῆμα, 404 a 11, *De Gen. et Corr.* I. 2, 315 b 6 Δημόκριτος δὲ καὶ Δεύκιππος ποιήσαντες τὰ σχήματα τὴν ἀλλοίωσιν καὶ τὴν γένεσιν ἐκ τούτων ποιοῦσι. Here they are described first by the positive quality of shape or figure, and next by the negative quality of indivisibility. Similarly Lucretius (III. 246 et al.) uses *figurae* for atoms. The other qualities Democritus ascribed to matter were magnitude, solidity and mobility.

a 2. τὰ σφαιροειδῆ: cf. 405 a 9—13, 406 b 20 sqq., *De Resp.* 4, 472 a 3 λέγει δ' ὡς ἡ ψυχὴ καὶ τὸ θερμόν ταῦτόν τὰ πρῶτα σχήματα τῶν σφαιροειδῶν. Other testimonia: Aetius *Plac.* IV. 3. 5 (Diels, *Doxogr. Gr.* p. 388) Δημόκριτος πυρῶδες σύγκριμα ἐκ τῶν λόγῳ θεωρητῶν, σφαιρικὰς μὲν ἔχοντων τὰς ἰδέας, πυρίνην δὲ τὴν δύναμιν, ὅπερ σῶμα εἶναι, i.e. the atoms which constitute soul have spherical

shapes and a fiery nature, Cic. *Tusc. Disp.* I. § 22 Democritum...levibus et rotundis corpusculis efficientem animum concursu quodam fortuito omittamus, Nemesius, *De Nat. Hom.* c. 2 Δημόκριτος δὲ πῦρ. τὰ γὰρ σφαιροειδῆ σχήματα τῶν ἀτόμων συγκρινόμενα πῦρ τε καὶ ἀήρ ψυχὴν ἀποτελεῖν [*Doxogr. Gr.* p. 388<sup>b</sup> 8, cf. p. 49, n. 2].

a 3. οὖν κτέ. So far we have had a clear statement, which is resumed at 404 a 5 τούτων δὲ τὰ σφαιροειδῆ ψυχὴν: where the reason why spherical atoms were selected is given. But the interspersed simile of the motes in the sunbeams, as well as the more general reference to atomism as contained in the words ὃν τὴν μὲν πανσπερμίαν τῆς δλης φύσεως στοιχεῖα λέγει· ὁμοίως δὲ καὶ Δεΰκιππος, tend rather to confuse the exposition; probably "soul-atoms," and not atoms in general, are compared to motes in the sunbeam: and, if we lay unusual stress on φαίνεται, the point of comparison may be, as Them. (9, 13—19 H., 16, 12—20 Sp.) says, that soul, though invisible, may be corporeal, as are the motes which, ordinarily invisible, are seen in the sunlight under certain conditions. With this Simpl. 25, 30—26, 1 and Philop. 67, 21—28 in the main agree, though they lay more stress upon the minuteness than upon the invisibility of the atoms. But the atoms are wholly imperceptible to sense; they are not, like the motes, though usually invisible, visible under exceptional circumstances. The point of the comparison between motes and atoms must be the incessant mobility (a 20) and endless multitude of the motes: in Milton's words "Shapes ...as thick and numberless as the gay motes that people the sunbeams." The fact which Them. advances, their partial and occasional visibility, really makes against them as suitable illustrations of the invisible atoms. Lucretius II. 114—141 uses the simile of the motes to illustrate the incessant motion, not of soul-atoms but of atoms in general: conicere ut possis ex hoc, primordia rerum | quale sit in magno iactari semper inani (121 sq.). We see, he says, the motes, impelled by unseen blows, change their course and tumble restlessly, now in one direction, now in another, and we must infer that this restlessness and change of direction are due to unseen movements of the atoms. For the atoms move first of themselves; next those bodies which form a small aggregate are impelled and set in movement by the unseen strokes of the atoms, and they next in turn stir up bodies which are a little larger, till by little and little they become visible and are seen to move in the sun, though why they move is not seen.

a 4. ὃν, sc. σχημάτων not ξυσμάτων.

a 4. τὴν μὲν πανσπερμίαν. Of πανσπερμία Trend. says vox, ut videtur, Democrito in hac re propria. Cf. *Phys.* III. 4, 203 a 19 ὅσοι δ' ἄπειρα ποιοῦσι τὰ στοιχεῖα, καθάπερ Ἀναξαγόρας καὶ Δημόκριτος, ὁ μὲν ἐκ τῶν ὁμοιομερῶν, ὁ δ' ἐκ τῆς πανσπερμίας τῶν σχημάτων, τῇ ἀφῇ συνεχὲς τὸ ἄπειρον εἶναι φασίν. The word is also used of the chaotic mixture of atoms in air, earth and water according to the Atomists, *De Cael.* III. 4, 303 a 14 ἀέρα δὲ καὶ ὕδωρ καὶ τὰλλα μεγέθει καὶ μικρότητι διεῖλον, ὥς οὖσαν αὐτῶν τὴν φύσιν οἶον πανσπερμίαν πάντων τῶν στοιχείων. On the other hand it serves to denote on the view of Anaxagoras what others call the four elements: *De Gen. et Corr.* I. 1, 314 a 28 οἱ δὲ [sc. οἱ περὶ Ἀναξαγόραν] ταῦτα μὲν [sc. τὰ ὁμοιομερῆ] ἀπλᾶ καὶ στοιχεῖα, γῆν δὲ καὶ πῦρ καὶ ὕδωρ καὶ ἀέρα σύνθετα· πανσπερμίαν γὰρ εἶναι τούτων. Cf. also of Anaxagoras *De Cael.* III. 3, 302 b 1 ἀέρα δὲ καὶ πῦρ μίγμα τούτων [flesh, bone, and the like] καὶ τῶν ἄλλων σπερμάτων πάντων· εἶναι γὰρ ἐκάτερον αὐτῶν ἐξ ἀοράτων ὁμοιομερῶν πάντων ἡθροισμένων. While σπέρματα χρημάτων occurs in the fragments of Anaxagoras fr. 4 Diels, we have no such evidence for the use of the word by the Atomists. In *De Sensu* 4, 441 a 6 πανσπερμία χυμῶν is applied to water as a reservoir or receiving-house of all possible flavours.

a 5. Δεύκιππος. That a work *περὶ νοῦ* was ascribed to him we know from the single citation of his writings which has come down to us on good authority (see Aet. *Plac.* I. 25, 4, p. 321 Diels, *Doxogr. Gr.*): Δ... λέγει ἐν τῷ Περὶ νοῦ "οὐδὲν χρῆμα μάτην γίνεται ἀλλὰ πάντα ἐκ λόγου τε καὶ ὑπ' ἀνάγκης." Diels thinks that such a work probably dealt with the soul (35 *Philol.-Vers.*, p. 102). The Atomists identified νοῦς with ψυχή: see note on 404 a 28 ἀπλῶς κτέ. What information we have about Leucippus is collected by Diels in *Fragmente der Vorsokratiker* 54, pp. 356—365. Leucippus (in view of Diog. Laert. x. 13, be it remarked) is always treated by A. as a historical person, distinct from Democritus.

a 5. τούτων δέ, "of these atoms." The demonstrative refers to the same thing as the relative ὧν, Greek idiom being averse to the repetition of the relative. So 417 a 5 sq. ὧν ἐστὶν ἡ αἰσθησις καθ' αὐτὰ ἢ τὰ συμβεβηκότα τούτοις. The pronouns ὧν and τούτοις both replace στοιχεῖα, which has preceded.

a 6. τὰ σφαιροειδῆ. Spherical atoms are asserted to be the constituents of fire, *infr.* 405 a 11 sqq., *De Cael.* III. 4, 303 a 12 ποῖον δὲ καὶ τί ἐκάστου τὸ σχῆμα τῶν στοιχείων, οὐθὲν ἐπιδιώρισαν, ἀλλὰ μόνον τῷ πυρὶ τὴν σφαῖραν ἀπέδωκαν, *ib.* III. 8, 306 b 29 ἀλλὰ μὴν καὶ πρὸς τὰ πάθη τε καὶ τὰς δυνάμεις καὶ τὰς κινήσεις ἀσύμφωνα τὰ σχήματα τοῖς σώμασιν, εἰς ἃ μάλιστα βλέψαντες οὕτω διένειμαν. οἷον ἐπεὶ τὸ πῦρ εὐκίνητόν ἐστι καὶ θερμαντικὸν καὶ καυστικόν, οἱ μὲν [the Atomists] ἐποίησαν αὐτὸ σφαῖραν, οἱ δὲ [the Platonists] πυραμίδα. ταῦτα γὰρ εὐκίνητότατα μὲν διὰ τὸ ἐλαχίστων ἄπτεσθαι καὶ ἥκιστα βεβηκέναι, θερμαντικώτατα δὲ καὶ καυστικώτατα, διότι τὸ μὲν [the sphere] ὅλον ἐστὶ γωνία, τὸ δὲ [the pyramid] ὀξυγωνιώτατον, καίει δὲ καὶ θερμαίνει ταῖς γωνίαις, ὥς φασίν, *De Gen. et Corr.* I. 8, 326 a 3 καίτοι τοῦτό γε ἄποπον, τὸ μόνον ἀποδοῦναι τῷ περιφερεῖ σχήματι τὸ θερμόν. ἀνάγκη γὰρ καὶ τοῦναντίον τὸ ψυχρὸν ἄλλω τινὶ προσήκειν τῶν σχημάτων.

a 6 διὰ τὸ...7 διαδύνειν. The spherical body meets with less obstruction in its course because, as explained in *De Cael.* III. 8, 306 b 34 (see last note), its contact with an obstacle is confined to the smallest extent of surface, διὰ τὸ ἐλαχίστων ἄπτεσθαι, further it is the least stable of all solid bodies.

a 7. τοὺς τοιοῦτους ῥυσμούς, such, i.e. spherical, atomic shapes, "figures." The Ionic ῥυσμός was used by Leucippus and Democritus, and the Attic σχῆμα was substituted for it by A., as he himself explains *Metaφρ.* 985 b 15 διαφέρειν γὰρ φασι τὸ ἐν ῥυσμῷ καὶ διαβιγῇ καὶ τροπῇ μόνον· τούτων δὲ ὁ μὲν ῥυσμός σχήμά ἐστιν, ἡ δὲ διαβιγὴ τάξις, ἡ δὲ τροπὴ θέσις· διαφέρει γὰρ τὸ μὲν Α τοῦ Ν σχήματι. Herodotus uses ῥυθμός of the "shape" of letters, *V.* 58 μετέβαλον καὶ τὸν ῥυθμὸν τῶν γραμμάτων. But cf. Archil. *fr.* 40 οἷος ῥυσμός ἀνθρώπους ἔχει: and the use of the form ῥυσμός by Callimachus proves that the form comes from the earlier Epic diction.

a 7 καὶ κινεῖν...8 καὶ αὐτὰ: cf. *infr.* 406 b 15 sqq.

a 8 ὑπολαμβάνοντες...9 τὴν κίνησιν: cf. 403 b 29 τὸ κινεῖν, *infr.* 404 a 11 τῶν σχημάτων τὰ παρέχοντα τοῖς ζῴοις τὴν κίνησιν, a 21, 23.

a 9. ὅρον, "determinant," i.e. determining factor or principle, distinctive mark. *Ind. Ar.* 529 b 44 omnino id significat, quo alicuius rei natura constituitur et definitur, *De Gen. An.* IV. 1, 766 a 31 τῆς δὲ δυνάμεως ὅρος καὶ τῆς ἀδυναμίας τὸ πεπτικὸν εἶναι ἢ μὴ πεπτικόν, "potency or impotence is determined by the animal having or not having a good digestion": *Pol.* 1294 a 10 ἀριστοκρατίας ὅρος ἀρετῆς: 1294 b 14 τοῦ δ' εὖ μεμίχθαι δημοκρατίαν καὶ ὀλιγαρχίαν ὅρος κτέ. This sense of the word is quite distinct from that of the standard to aim at; it is more akin to, yet distinct from, that of definition. So Plato, e.g. *Rep.* 551 A νόμον τίθενται ὅρον πολιτείας ὀλιγαρχικῆς, ταξάμενοι πλῆθος χρημάτων, *Politic.* 292 A οἰόμεθά τινα τούτων τῶν πολιτειῶν ὀρθὴν εἶναι τούτοις τοῖς ὅροις ὀρισθεῖσαν,

ἐνὶ καὶ ὀλίγοις καὶ πολλοῖς, καὶ πλούτῳ καὶ πενίᾳ, καὶ τῷ βιαίῳ καὶ ἔκουσίῳ, e.g. wealth and a paucity of rulers are characteristics which help to determine oligarchy. Cf. also *Metaph.* 1049 a 5 ὅρος δὲ τοῦ μὲν ἀπὸ διανοίας ἐντελεχεῖα γιγνομένου ἐκ τοῦ δυνάμει ὄντος, ὅταν κτέ.

a 10. τοῦ περιέχοντος, "the surrounding atmosphere"; "the physical environment" in which animals live. This term seems to have been vaguely used. It has a wider sense in Anaxagoras *fr.* 2 and 14 D: and similarly Hippol. *ref. haeres.* 1. 12 [*Doxogr. Gr.* 564, 29], in what professes to be an account of the views of Leucippus, κόσμους δὲ [ἃς inseruit de coniectura Usener] γίνεσθαι λέγει· ὅταν εἰς μέγα κενὸν ἐκ τοῦ περιέχοντος [i.e. from the universe outside this void] ἀθροισθῇ πολλὰ σώματα καὶ συρρυῇ, προσκρούοντα ἀλλήλοις κτέ.

a 11 τῶν σχημάτων τὰ παρέχοντα... 12 τὴν κίνησιν, i.e. spherical atoms; v. *supr.* 404 a 2, 6, notes.

a 12. βοήθειαν γίνεσθαι θύραθεν, i.e. the soul atoms within (τὰ ἐνυπάρχοντα) are recruited or reinforced by the arrival of fresh soul-atoms from without. The function of respiration according to Democritus is further explained in *de Resp.* 4. 471 b 30—472 a 26. I cite 472 a 5 συγκρινομένων οὖν αὐτῶν [the spherical soul-atoms] ὑπὸ τοῦ περιέχοντος ἐκθλίβοντος, βοήθειαν γίνεσθαι τὴν ἀναπνοὴν φησιν.

a 15. συνανείργοντα τὸ συνάγον καὶ πηγνύνον, int. τὸ περιέχον (*supr.* a 10 συνάγοντος γὰρ τοῦ περιέχοντος τὰ σώματα): cf. *De Resp.* 4. 472 a 31 ἐν γὰρ ταῖς ἀλείας θερμαίνόμενοι μᾶλλον καὶ τῆς ἀναπνοῆς μᾶλλον δεόμεθα καὶ πυκνότερον ἀναπνέομεν πάντες· ὅταν δὲ τὸ περίεξ ἢ ψυχρὸν καὶ συνάγῃ καὶ συμπηγνύῃ τὸ σῶμα, κατέχειν συμβαίνει τὸ πνεῦμα. A. is there urging that the facts are inconsistent with this atomistic theory. It is when we are hot that we breathe quickly; when the surrounding atmosphere is cold, when it compresses and contracts the body, we hold in our breath; and yet, A. continues, that was the time for the external air to enter and counteract the compression (a 35) καίτοι τότε ἔχρην τὸ θύραθεν εἰσὶν κωλύειν τὴν σύνθλιψιν. The verb πηγνύναι is used of compression by cold or by heat (*De Gen. An.* II. 6, 743 a 5 συνίσταται καὶ πήγνυται τὰ μὲν ψυχρῷ τὰ δὲ θερμῷ) or of pressure generally, as here.

a 16. ἕως ἂν δύνωνται τοῦτο ποιεῖν, i.e. ἀναπνεῖν. The account in *De Resp.* 4 is more explicit: 472 a 10 καὶ διὰ τοῦτο ἐν τῷ ἀναπνεῖν καὶ ἐκπνεῖν εἶναι τὸ ζῆν καὶ ἀποθνήσκειν· ὅταν γὰρ κρατῇ τὸ περιέχον συνθλίβον, καὶ μηκέτι θύραθεν εἰσὼν δύνῃται ἀνείργειν, μὴ δυναμένου ἀναπνεῖν, τότε συμβαίνει τὸν θάνατον τοῖς ζῴοις· εἶναι γὰρ τὸν θάνατον τὴν τῶν τοιούτων σχημάτων ἐκ τοῦ σώματος ἔξοδον ἐκ τῆς τοῦ περιέχοντος ἐκθλίψεως. Though A. does not mention the fact, it is highly probable that the Atomists gave a similar explanation of sleep as the partial expulsion of warm soul-atoms. Cf. *Aet. Plac.* v. 25, 3 (*Doxogr. Gr.* 437, 13).

a 16. τὸ παρὰ τῶν Πυθαγορείων λεγόμενον. Note that παρὰ replaces ὑπὸ used of the agent. Cf. *De Gen. et Corr.* II. 10, 336 b 16 τοῖς παρ' ἡμῶν λόγοις. *Metaph.* 985 b 22 ἐξηγήσθαι παρὰ τῶν πρότερον, 986 b 6 διήρθρωται παρ' ἐκείνων.

a 17. δianoian. Cf. *Ind. Ar.* s.v.: δianoia denotes the sense and meaning of a term, "vis ac significatio vocabuli," as opposed to the term ὄνομα itself (*Ind. Ar.* 186 b 15): or again (*ib.* 19) the intellectual element of a speech as opposed to the language and style (λέξις, λόγος); and so it is used of a writer's spirit or intention as distinct from his words, literally understood, cf. *Metaph.* 985 a 4 λαμβάνειν πρὸς τὴν δianoian καὶ μὴ πρὸς ἃ ψελλίζεται λέγων.

a 19. περὶ δὲ τούτων εἴρηται διότι. Τούτων=τῶν ξυσμάτων and διότι=ὅτι, that: Philop. 70, 35 εἴρηται γάρ, φησί, περὶ αὐτῶν, ὅτι ὁρῶνται ἀεικίνητα, κἂν ᾗ νημεῖα, ὥς ὅκοθεν καὶ μὴ ὑπὸ τοῦ ἀνέμου ἔχει τὴν κίνησιν. To whom this statement is to be attributed is not clear. It may be A. himself, though the fact that the constant motion of motes is noticed, *Probl.* xv. 13, 913 a 8 sqq., is not

proof. Or Sophonias may be right in assigning it to the Pythagoreans in question, 11, 22 *ἐλρηται δὲ αὐτοῖς τοῦτο, ἐπεὶ συνεχῶς φαίνεται κινούμενα*. Obviously he understood *διότι* to mean "because" as did Themistius (9, 30 H., 17, 5 Sp.).

a 21. *καὶ ὅσοι...τὸ αὐτὸ κινοῦν*, a doctrine of Plato and his school maintained amongst others by Xenocrates, the contemporary head of the Academy, who is seldom referred to by name. His theory is sharply criticised *inf.* I. 4. 408 b 32 sqq. Philop. 71, 6 probably on the strength of 405 a 29 sqq. also names Alcmaeon, *αἰνίττεται εἰς Πλάτωνα καὶ Ξενοκράτην καὶ Ἀλκμαίωνα*. Philop. adds 71, 9 *ὅτι δὲ ὁ Πλάτων αὐτοκίνητον λέγων τὴν ψυχὴν οὐ τὴν κατὰ τόπον ἔλεγε κίνησιν, αὐτὸς σαφῶς λέγει ἐν τοῖς Νόμοις*, presumably 895 E, 896 B. The passage in the *Laws* begins thus, 895 E AΘ. *Ὡς δὴ ψυχὴ τοῦνομα, τίς τούτου λόγος; ἔχομεν ἄλλον πλὴν τὸν νυνδὴ ῥηθέντα [894 C], τὴν δυναμένην αὐτὴν αὐτὴν κινεῖν κίνησιν; ΚΑ. Τὸ ἐαυτὸ κινεῖν φῆς λόγον ἔχειν τὴν αὐτὴν οὐσίαν, ἣν περ τοῦνομα, ὃ δὴ πάντες ψυχὴν προσαγορεύομεν; ΑΘ. Φημί γε κτέ.* To the same effect Simpl. 25, 14—24 (citing Pl. *Legg.* 894 C) and 26, 21—31. As to Plato, the *locus classicus* is *Phaedr.* 245 C—E, where it is proved *μὴ ἄλλο τι εἶναι τὸ αὐτὸ ἐαυτὸ κινοῦν ἢ ψυχὴν*. The tenth book of the *Laws*, especially the important section 894 C—896 E, proves that Plato maintained this doctrine to the last. This is recognised by A. in *Metaph.* 1072 a 1 *ἣν οἶεται ἐνίοτε ἀρχὴν εἶναι, τὸ αὐτὸ ἐαυτὸ κινοῦν*, where the context shows that soul is meant.

a 21 *ἐοίκασιν γὰρ...25 αὐτὸ κινεῖται*. Here the inference is more apparent than in the previous statement, 403 b 28—31. But the reasoning by which the conclusion is reached is A.'s own. He is too fond of interpreting his predecessors from his own point of view and too apt to read more into their suggestions than was originally intended.

a 25 *ὁμοίως δὲ...ψυχὴν εἶναι...26 τὴν κινούσαν*. The feminine by a curious sort of attraction for *τὸ κινοῦν* the neuter (cf. 403 b 29). Anaxagoras declared *νοῦς* to be the cause of motion which communicated motion to the primitive chaos and brought like to like (404 a 26 *τὸ πᾶν ἐκίνησε νοῦς*). (Cf. Anax. *fr.* 12 D *καὶ τῆς περιχωρήσιος τῆς συμπάσης νοῦς ἐκράτησεν, ὥστε περιχωρῆσαι τὴν ἀρχήν*, and *fr.* 13 D *καὶ ἐπεὶ ῥέετο ὁ νοῦς κινεῖν, ἀπὸ τοῦ κινουμένου παντὸς ἀπεκρίνετο*.) As the context shows (404 a 27 *οὐ μὴν παντελῶς γ' ὥσπερ Δημόκριτος*), A. is aware that the identification of this *νοῦς* with *ψυχὴ*, as he uses it throughout the treatise for the vital force of animals, is not satisfactorily made out. Cf. *inf.* 405 a 13 and *note*.

a 26. *εἰ τις ἄλλος*. Possibly a reference to Hermotimus of whom we hear *Metaph.* 984 b 19 *αἰτίαν δ' ἔχει πρότερον* [sc. *Ἀναξαγόρου*] *Ἑρμότιμος ὁ Κλαζομήνιος εἰπεῖν*.

a 27. *ἐκεῖνος μὲν γὰρ*, sc. Democritus, who is for A. in the background now that we are immediately concerned with Anaxagoras.

a 28. *ἀπλῶς ψυχὴν ταῦτόν καὶ νοῦν*, sc. *εἶναι λέγει* (the latter word must also be supplied above with a 27) which A. himself supplies (a 31). The identity between *ψυχὴ* and *νοῦς* in the Atomic system is again asserted (405 a 8—13) and *De Resp.* 472 a 7 *τῶν τοιούτων* [sc. *σχημάτων*] *ἃ καλεῖ ἐκεῖνος νοῦν καὶ ψυχὴν*. Cf. Aet. IV. 5. 12 (*Doxogr. Gr.* 391) *Παρμενίδης καὶ Ἑμπεδοκλῆς καὶ Δημόκριτος ταῦτόν νοῦν καὶ ψυχὴν, καθ' οὓς οὐδὲν ἂν εἴη ζῶον ἄλογον κυρίως*. The Atomists are no doubt included by A. among the older philosophers who did not distinguish between thought and sense-perception, but explained both as a corporeal change. See 427 a 21, 26. Cf. Theophr. *De Sensibus* 58, 72 [*Doxogr. Gr.* 515, 22 sqq., 520, 13 sqq.], Aet. IV. 8. 5 [*Doxogr. Gr.* 394, 26 sqq.] *Δεύκιππος Δημόκριτος τὰς αἰσθήσεις καὶ τὰς νοήσεις ἑτεροιώσεις εἶναι τοῦ σώματος*, 8. 10 (*Doxogr. Gr.* 395, 25) *Δεύκιππος Δημόκριτος Ἐπίκουρος τὴν αἴσθησιν καὶ τῇ*

νόησιν γίνεσθαι εἰδῶλων ἔξωθεν προσιόντων. μηδενὶ γὰρ ἐπιβάλλειν μηδετέραν χωρὶς τοῦ προσπίπτοντος. The identity of νοῦς and ψυχή is more completely implied in the line of Empedocles *frag.* 110, 10 D, 313 Karsten πάντα γὰρ ἡσθι φρόνησιν ἔχειν καὶ νόματος αἴσαν. So far from confining intelligence to certain animals only (ζῷα), as did A. (404 b 5 sq., 427 b 7 sq., 12—14), Empedocles here ascribes intelligence and the power of thought to all things, including, as Sext. Emp. *adv. Math.* VIII. 286 says, even plants. Thus there would be no ἄλογα ζῷα in the strict sense of the term, Aet. IV. 5. 12 (cited above). Again, if the identity of νοῦς and ψυχή be maintained, the problem εἰ μεριστὴ ἢ ψυχὴ ἢ ἀμερής (402 b 1) must be regarded as foreclosed, Philop. 35, 12 ἀμερὴ γὰρ φησιν αὐτὴν [sc. τὴν ψυχὴν] Δημόκριτος εἶναι καὶ οὐ πολυδύναμον, ταῦτόν εἶναι λέγων τὸ νοεῖν τῷ αἰσθάνεσθαι καὶ ἀπὸ μιᾶς ταῦτα προέρχεσθαι δυνάμεως.

a 28. τὸ γὰρ ἀληθὲς εἶναι τὸ φαινόμενον. This proposition, which recurs as the doctrine of "some" thinkers 427 b 3, is understood by A. to mean the denial of objective truth, and to it he opposes his own position, *Metaph.* 1010 b 1 sq. ὥς οὐ πᾶν τὸ φαινόμενον ἀληθές. Democritus is classed with Empedocles as holding the doctrine of relativity, *ib.* 1009 b 1—17: "the opinion that appearances are true has been derived by some from sensible things, which do not appear the same (e.g. sweet or bitter) to different men at the same time, or to the same men at different times, or the same to men as they appear to other animals": *ib.* 9 ποῖα οὖν τούτων ἀληθὴ ἢ ψευδῆ ἀδελον· οὐδὲν γὰρ μᾶλλον τάδε ἢ τάδε ἀληθῆ, ἀλλ' ὁμοίως. διὸ Δημόκριτός γε φησιν ἦτοι οὐδὲν εἶναι ἀληθές ἢ ἡμῖν γ' ἀδελον. ὅλως δὲ διὰ τὸ ὑπολαμβάνειν φρόνησιν μὲν τὴν αἰσθῆσιν, ταύτην δ' εἶναι ἀλλοίωσιν, τὸ φαινόμενον κατὰ τὴν αἰσθῆσιν ἐξ ἀνάγκης ἀληθὲς εἶναι φασιν· ἐκ τούτων γὰρ καὶ Ἐμπεδοκλῆς καὶ Δημόκριτος καὶ τῶν ἄλλων ὥς ἔπος εἰπείν ἕκαστος τοιαύταις δόξαις γεγέννηται ἔνοχοι. More explicitly of the Atomists alone *De Gen. et Corr.* I. 2. 315 b 9 ἐπεὶ δ' ὄντο τὰ ἀληθῆ ἐν τῷ φαίνεσθαι, ἐναντία δὲ καὶ ἅπειρα τὰ φαινόμενα, τὰ σχήματα ἅπειρα ἐποίησαν, ὥστε ταῖς μεταβολαῖς τοῦ συγκειμένου τὸ αὐτὸ ἐναντίον δοκεῖν ἄλλῳ καὶ ἄλλῳ, καὶ μετακινεῖσθαι μικροῦ ἐμμυγνύμενου, καὶ ὅλως ἔτερον φαίνεσθαι ἐνὸς μετακινήθεντος· ἐκ τῶν αὐτῶν γὰρ τραγωδία καὶ κωμωδία γίγεται γραμμάτων.

Zeller, *Pre-Socratics*, Eng. Tr. Vol. II. p. 272, points out the inconsistency between this supposed tenet of Democritus and the whole tenour of his system, especially with his famous distinction between ἡ σκοτιή γνώμη, i.e. sense-knowledge, and ἡ γνησίη γνώμη, whereby atoms and void are affirmed to be the only reality, for which see *frag.* 11 ap. Sext. Emp. VII. 139. Zeller continues: "If, therefore, Aristotle attributes to Democritus the opinion that the sensible perception as such is true, the statement is founded merely on his own inferences; because the Atomistic philosopher did not definitely distinguish between the faculty of perception and that of thought, therefore Aristotle concludes that he must have put both on the same footing in respect of their truth." Cf. Natorp, *Erkenntnisproblem*, p. 164 sqq. The passage I have above cited from *Metaph.* 1009 b 1—17 is part of A.'s defence of the law of contradiction, that a thing cannot be at the same time and in the same respect both A and not-A, which we are justified in asserting D. held as firmly as A. himself. Cf. further 426 a 20 sqq. Dyroff, however (*Demokrit-Studien*, pp. 74, 88), inclines to think that D. himself and not A. drew this inference. Dyroff thinks A. is right in holding that because αἰσθάνεσθαι = νοεῖν and sense-perception is an ἀλλοίωσις (1009 b 13: Zeller and Natorp overlook this), therefore that which appears by means of sense-perception is true. Instead of "thought and perception both depend upon body" D. said "thought is perception, both are corporeal," and this, Dyroff thinks, justifies the conclusion,



even if A. drew it. Whether D. did, or did not, deny objective existence altogether, his position as regards the sensible qualities of matter is clear. He was the first to lay down the distinction between the so-called "primary" and "secondary" qualities. The atoms have no secondary qualities. Thus colours, flavours, smells *per se* have no objective existence: they, at all events, are subjective affections of the percipient. Colour belongs not to the atoms, but to the natural objects which are produced by the aggregation of atoms, and is due to the order, shape and position of the atoms in such aggregates, whereby they act upon our sense and qualitatively alter it. Cf. Theoph. *De Sensibus* 63 πάντα πάθη τῆς αἰσθήσεως ἀλλοιούμενης, ἐξ ἧς γίνεσθαι τὴν φαντασίαν, 69 τὸ δὲ γλυκὺ καὶ ὅλως τὸ αἰσθητὸν πρὸς ἄλλο καὶ ἐν ἄλλοις, ὥς φησω, 64 τὰ περὶ τοὺς χυλοὺς ἀναφέρων τὴν φαντασίαν πρὸς ἄνθρωπον. For the doctrine of universal relativity as applied to sense-perception by the followers of Heraclitus and Protagoras the *locus classicus* is Pl. *Theaet.* 153—157, where again the salient example is colour (156 C—E), though all sensible qualities are expressly included, 156 B, E.

a 30. Ἐκτωρ κείτ' ἄλλοφρονέων. The actual words do not occur in our text of Homer. In *Il.* 23, 698 however the word ἄλλοφρονέοντα in the required sense of "swooning" is used of Euryalus after the boxing-match (καθ' δ' ἄλλοφρονέοντα μετὰ σφίσιν εἶσαν ἄγοντες), while in *Il.* 22, 330 it is said of Hector in his last fight with Achilles that he "fell in the dust" (ῥριπε δ' ἐν κονίῃσ') and then at 337 that "faint and weak he bespake Achilles" (τὸν δ' ὀλιγοδρανέων προσέφη). Cf. *Metaeph.* 1009 b 28 φασὶ δὲ καὶ τὸν Ὀμηρον ταύτην ἔχοντα φαίνεσθαι τὴν δόξαν [the theory of relativity ὅτι τοιαῦτ' αὐτοῖς ἔσται τὰ ὄντα οἷα ἂν ὑπολάβωσιν], ὅτι ἐποίησε τὸν Ἐκτορα, ὥς ἐξέστη ὑπὸ τῆς πληγῆς, κείσθαι ἄλλοφρονέοντα, ὥς φρονούντας μὲν καὶ τοὺς παραφρονούντας ἀλλ' οὐ ταῦτά. δῆλον οὖν ὅτι, εἰ ἀμφοτέραι φρονήσεις, καὶ τὰ ὄντα ἅμα οὕτω τε καὶ οὐχ οὕτως ἔχει. Sense as well as thought suffered from the blow, so that φρονεῖν and ἄλλοφρονεῖν must be understood of consciousness in the widest sense. (On αἰσθάνεσθαι=to be conscious, an extension of meaning not really analogous, see 425 b 12, *note*.) Democritus had firmly grasped the dependence of the normal consciousness upon the healthy physical condition alike of the body and the equally material soul. This point is brought out by Theophrastus *De Sensibus* 58 (Diels, *Doxogr. Gr.* 515, 23 sqq.) γίνεται [int. τὸ φρονεῖν] συμμέτρως ἐχούσης τῆς ψυχῆς κατὰ τὴν κρᾶσιν [Schneider's corr. for μετὰ τὴν κίνησιν]. ἐὰν δὲ περίθερμός τις ἢ περίψυχρος γένηται, μεταλλάττει φησί. διὸ καὶ τοὺς χιλλοὺς καλῶς τοῦθ' ὑπολαβεῖν ὅτι ἐστὶν 'ἄλλοφρονεῖν.' In Hector's case the chill of approaching death is the disturbing cause.

a 30 οὐ δὲ χρῆται...31 νοῦν. χρῆται, sc. Democritus. The divergence between his use of the term νοῦς and A.'s comes out more clearly here. To A. νοῦς is a distinct faculty, one of several concerned with truth, cf. 428 a 17 sq., a 3—5, *Eth. Nic.* 1139 b 15 ἔστω δὲ οἷς ἀληθεύει ἡ ψυχὴ τῷ καταφάναι ἢ ἀποφάναι, πέντε τὸν ἀριθμόν· ταῦτα δ' ἐστὶ τέχνη ἐπιστήμη φρόνησις σοφία νοῦς· ὑπολήψει γὰρ καὶ δόξῃ ἐνδέχεται διαψεύδεσθαι. That neither φρονεῖν nor νοεῖν can be identified with αἰσθάνεσθαι is argued succinctly 427 b 6—14. Democritus (and Leucippus, if the work *Περὶ νοῦ* is rightly ascribed to him) has not so differentiated the term, but employs it in the older and vaguer sense for soul in general as the animating principle or part. This is the usual meaning of νόος in Homer and the older poets (ἐνὶ στήθεσσι ἀάμβητος νόος ἐστίν, εὐμενεί νόφ) frequent in Hdt., e.g. VIII. 97 ἐκ παντὸς νόου, and at all periods in the phrase κατὰ νόον.

404 b 1. ἦττον διασαφεῖ. A. is perfectly sure that Democritus uses νοῦς and ψυχὴ as interchangeable terms. That Anaxagoras did so is not so clear. Cf. note on 404 a 25. Here A. argues that the νοῦς which Anaxagoras finds in all

living things must be what A. himself means by *ψυχή*, and that it cannot be *ὁ κατὰ φρόνησιν νοῦς*: but below (405 a 13) he decides that by *νοῦς* Anaxagoras intended something different from *ψυχή*, thus widely diffused through all animate beings. Cf. b 1 *πολλαχού μὲν...2 ἐτέρωθι δέ. περὶ αὐτῶν*, i.e. *περὶ ψυχῆς καὶ νοῦ*. Both terms are found in *frag.* 12 D *καὶ ὅσα γε ψυχὴν ἔχει καὶ μείζω καὶ ἐλάσσω, πάντων νοῦς κρατεῖ*, where *ψυχὴν ἔχειν* = *ἐμψυχα εἶναι* as in *frag.* 4 D *καὶ ἀνθρώπους τε συμπαγῆναι καὶ τὰ ἄλλα ζῶα ὅσα ψυχὴν ἔχει*. Pl. *Crat.* 400 A joins *ψυχή* with *νοῦς* when he refers to the principal doctrine of Anaxagoras: *καὶ τὴν τῶν ἄλλων ἀπάντων φύσιν οὐ πιστεύεις Ἀναξαγόρα νοῦν τε καὶ ψυχὴν εἶναι τὴν διακοσμοῦσαν καὶ ἔχουσαν*.

b 2. *τὸ αἴτιον τοῦ καλῶς καὶ ὀρθῶς*, sc. *ἔχειν*. The view that Anaxagoras regarded *νοῦς* as the cause of the beautiful and orderly arrangement in the world is also expressed in *Μεταφρ.* 984 b 8—23, esp. 15 *νοῦν δὴ τις εἰπὼν ἐνείναι, καθάπερ ἐν τοῖς ζῴοις, καὶ ἐν τῇ φύσει τὸν αἴτιον τοῦ κόσμου καὶ τῆς τάξεως πάσης οἶον νήφων ἐφάνη παρ' εἰκῇ λέγοντας τοὺς πρότερον*. Cf. *frag.* 12 D *καὶ τὰ συμμίσγόμενά τε καὶ ἀποκρινόμενα καὶ διακρινόμενα πάντα ἔγνω νοῦς. καὶ ὅποια ἔμελλεν ἔσθαι καὶ ὅποια ἦν, ἅσσα νῦν μὴ ἔστι, καὶ ὅποια ἔστι, πάντα διεκόσμησε νοῦς, καὶ τὴν περιχώρησιν ταύτην, ἣν νῦν περιχωρεῖ τά τε ἄστροι καὶ ὁ ἥλιος καὶ ἡ σελήνη καὶ ὁ ἀήρ καὶ ὁ αἰθήρ οἱ ἀποκρινόμενοι*.

b 2. *ἐτέρωθι δέ...ψυχὴν*. The γάρ of the following sentence seems to show that this identification of *νοῦς* and *ψυχή* is A.'s inference from the fact that Anaxagoras declared *νοῦς* to be everywhere present in all living things. He cannot have meant *ὁ κατὰ φρόνησιν λεγόμενος νοῦς*; he must therefore have meant what A. calls *ψυχή*.

b 3. *ἐν ᾧασι γὰρ ὑπάρχειν αὐτὸν τοῖς ζῴοις*. *αὐτὸν* = *τὸν νοῦν*. See *frag.* 12 D *καὶ ὅσα...πάντων νοῦς κρατεῖ* (cited above n. on 406 b 1 *περὶ αὐτῶν*). But in this fragment it is not clear that *κρατεῖ* bears out A.'s *ὑπάρχειν*, in other words, whether, according to Anaxagoras, the intelligence which rules all animate beings is, or is not, immanent: in 429 a 19 A. himself glosses *ἵνα κρατῇ* by *ἵνα γνωρίζῃ*.

b 5 *οὐ φαίνεται...6 τοῖς ζῴοις*. This is one of the premisses from which the conclusion is drawn that Anaxagoras uses *νοῦς* in the sense of *ψυχή*. By *φαίνεσθαι* an appeal to the facts is introduced. Cf. 403 a 5 *νοῦς*, 414 a 24 *καίπερ οὐδὲ φαινόμενον*, *De Cael.* II. 13, 294 b 4 *νῦν δ' οὐ φαίνεται τοῦτο γινόμενον*. In *ὁ κατὰ φρόνησιν νοῦς*, the preposition has a determining sense, cf. 417 b 9 *τὸ μὲν οὖν εἰς ἐντελέχειαν ἔγον ἐκ δυνάμει ὄντος κατὰ τὸ νοοῦν καὶ φρονοῦν*, 412 b 10 sq. *οὐσία ἢ κατὰ τὸν λόγον*: also such common phrases as *κατ' ἀριθμὸν ἐν*, *κατὰ δύναμιν*, *κατ' ἐνέργειαν*, *κατά τι* (as opposed to *ἀπλῶς* or *ὁλως*), *καθ' αὐτό*, *κατὰ συμβεβηκόσ*. That *φρονεῖν*, *φρόνησις* as more precise should be used to define *νοεῖν*, *νοῦς* may appear surprising: see, however, 427 a 17—27 where the two terms are used indifferently, 427 b 8 *τὸ νοεῖν, ἐν ᾧ ἐστὶ...φρόνησις, καὶ ἐπιστήμη καὶ δόξα ἀληθής*, 429 a 10 *ὃ [sc. τῷ νῷ] γινώσκει τε ἡ ψυχή καὶ φρονεῖ*. The statement of our text that *νοῦς* is something rare and exceptional if we look at the animal world as a whole recurs in 415 a 7—11, 427 b 8.

**404 b 8—405 b 10.** The other view, which regards soul as that which perceives and knows, identifies soul with the constituent elements of things perceived or known (i.e. of the universe), because like is known by like. Thus Empedocles (§ 6), Plato in the *Timaeus*, in *Τὰ περὶ φιλοσοφίας* and elsewhere (§ 7). Others [i.e. Xenocrates], combining motion and perception, have defined the soul as a self-moving number (§ 8). We have thus classed together philosophers whose views as to the nature and number of the constituent elements of things are widely different, some considering them as corporeal,

others as incorporeal (§ 9), some admitting but one ultimate principle, others a plurality. But the view taken of the soul and the view taken of the universe will be found to agree (§ 10). This agreement is exemplified in Democritus (§§ 11, 12). The views of Anaxagoras (§ 13), Thales (§ 14), Diogenes of Apollonia (§ 15), Heraclitus (§ 16), Alcmaeon (§ 17), Hippon (§ 18), Critias (§ 19) are briefly stated.

b 8. ὅσοι δ' ἐπὶ τὸ γινώσκειν καὶ τὸ αἰσθάνεσθαι τῶν ὄντων, sc. ἀπέβλεψαν. Here A. passes from the conception of soul as moving principle to the conception of soul as cognitive or perceptive.

b 9. οὔτοι δέ. Note the resumption after οὔτοι of the δέ already expressed at b 8, ὅσοι δέ, and cf. *Ind. Ar.* 166 b 58 ubi demonstrativa enunciatio sequitur relativam, non raro particula δέ relativo addita iteratur apud pronomen (adiectivum, adverbium) demonstrativum: *De Gen. et Corr.* I. 1, 314 a 8 ὅσοι μὲν ἐν τι τὸ πᾶν λέγουσιν εἶναι...τούτοις μὲν ἀνάγκη...ὅσοι δὲ πλείω τὴν ὕλην ἐνὸς τιθέασιν...τούτοις δὲ ἕτερον.

b 10. οἱ μὲν πλείους ποιοῦντες [ταύτας], οἱ δὲ μίαν ταύτην. I follow Bek., Trend., Torst., Diels in bracketing ταύτας, which is omitted in E. The other authorities vary. See *critical notes*. M. Rodier who retains ταύτας rightly, on his view, places a comma before the word and another before b 11 ταύτην, thus making the text a condensed expression for οἱ μὲν πλείους τὰς ἀρχὰς ποιοῦντες ταύτας εἶναι τὴν ψυχὴν, οἱ δὲ μίαν τὴν ἀρχὴν ποιοῦντες ταύτην εἶναι τὴν ψυχὴν λέγουσιν. But, though this is unambiguously expressed later on (405 b 17—19), it is not necessary to anticipate it here.

b 11. ὥσπερ Ἐμπεδοκλῆς μὲν ἐκ τῶν στοιχείων πάντων, sc. λέγει τὴν ψυχὴν εἶναι. By τὰ στοιχεῖα πάντα are meant the four so-called elements or σώματα ἀπλᾶ of A., earth, water, air (= αἰθήρ of Empedocles), and fire, as well as the two moving forces, attraction and repulsion, personified as Love and Strife. As Zeller shows (*Pre-Socratics*, Eng. Tr. II. pp. 167 sqq.) this is A.'s inference and involves a misconception: "A. concludes in his usual manner that according to Empedocles the soul is composed of all the four elements, an assertion which is then repeated by his commentators. It is, however, incorrect. Empedocles did not hold that the soul is composed of the elements: but what we call the activity of the soul he explained by the elementary composition of the body; a soul distinct from the body he did not assume. Thought, like all other vital activities, arises from and depends upon the admixture of substances in the body...It is in the blood especially, because there the elements are most completely mingled, that thought and consciousness have their chief seat, and particularly in the blood of the heart [*frag.* 105, 3 D]. But other parts of the body are not excluded from participation in thought, provided the elementary particles are tightly compressed and mixture is homogeneous. If the right admixture is limited to certain parts, the result is sense-organs with their special endowment." What Empedocles meant is best seen in the case of the special senses. As our sense-organs are composed of the very same elements as the objects outside the organism, knowledge of these objects is obtained through these organs. Thus the fire in the eye enables us to see fire, and so on.

b 12. εἶναι δὲ καὶ ἕκαστον ψυχὴν τούτων. This also is A.'s inference. If soul is compounded of the elements and a part of each element enters into its composition, then, in virtue of being such part, any one of the elements may be said to be a soul. *De Gen. et Corr.* II. 6, 334 a 9 ἀποπον δὲ καὶ εἰ ἡ ψυχὴ ἐκ τῶν στοιχείων ἢ ἐν τι αὐτῶν. A. is there dealing with Empedocles and continues 334 a 10 αἱ γὰρ ἀλλοιώσεις αἱ τῆς ψυχῆς πῶς ἔσονται, οἷον τὸ μουσικὸν εἶναι καὶ πάλιν ἄμουσον, ἢ μνήμη ἢ λήθη; δῆλον γὰρ ὅτι εἰ μὲν πῦρ ἢ ψυχὴ, τὰ πάθη ὑπάρξει

αὐτῇ ὅσα πυρὶ ἢ πῦρ· εἰ δὲ μικτόν, τὰ σωματικά· τούτων δ' [i.e. the ἀλλοιώσεις, τὸ μουσικὸν εἶναι καὶ πάλιν ἄμουνσον ἢ μνήμη ἢ λήθη] οὐδὲν σωματικόν. In the latter case, the properties of the compound may be different from those of the constituents, although still of course properties of a corporeal substance. Cf. Zeller, *op. cit.* p. 137, n. 1. The inference is virtually repeated 410 b 2 sq., 7—10 and, as Simpl. remarks, it rests on the assumption already formulated by A. that "that by which we know anything whatever is soul" (27, 36) οὐ μόνον τὸ ἐκ πασῶν μίγμα ψυχὴν λέγονται, ἀλλὰ καὶ ἐκάστην ἀρχὴν γνωστικὴν οὖσαν τοῦ ὁμοίου· τὸ γὰρ γνωστικὸν ὁποιοῦν ψυχὴν εἶναι.

b 13 γαλῆ μὲν γάρ...15 λυγρῶ. *Frag.* 109 D (ll. 321—323 K) cited also in *Metaph.* 1000 b 6 sqq. and by later writers, e.g. Sext. *Emp. Adv. Math.* I. 303, VII. 92, 121 with ἀήρ substituted for αἰθήρ in the first citation.

b 16. τὸν αὐτὸν δὲ τρόπον...ἐν τῷ Τιμαίῳ. The reference is to the *Φυχογονία* in *Timaeus* 34 C sqq.

b 17. γινώσκεισθαι γὰρ τῷ ὁμοίῳ τὸ ὅμοιον. That like is known by like is the assumption underlying the language of *Tim.* 37 A—C where Plato accounts for the generation of "sure opinions and true beliefs" (δόξαι καὶ πίστεις βέβαιοι καὶ ἀληθεῖς) as well as of νοῦς and ἐπιστήμη. Plato with his immaterial principles gives a wholly original application to the maxim 'like is known by like.' Here he stands quite apart from all his predecessors, although no doubt in his theory of vision (*Tim.* 45 B—46 C) he followed Empedocles.

b 17. ἐκ τῶν στοιχείων. In our context στοιχεῖα and ἀρχαὶ are synonymous terms, and we might fairly infer that this was so in the latest speculations of Plato and in those of his immediate followers. A. expressly asserts this of those who held the ideas to be numbers, *Metaph.* 1087 b 12 τὰς ἀρχὰς ἄς στοιχεῖα καλοῦσιν. Cf. 1086 b 37—1087 a 4.

b 18. τὰ δὲ πράγματα ἐκ τῶν ἀρχῶν εἶναι. What are here called πράγματα are to Plato γιγνόμενα, though he also, as well as A., sometimes calls them ὄντα. As to the principles from which "things" or phenomena are derived, see *Tim.* 27 D sqq.: ideas are the causes of phenomena, of the entire sensible universe with all things included therein.

b 19. ἐν τοῖς περὶ φιλοσοφίας λεγομένοις. The form of this reference would suggest a treatise entitled *Περὶ φιλοσοφίας*. But our authorities inform us that certain oral lectures of Plato's are intended, of which A. and possibly other disciples of Plato had made summaries or compendia (cf. Heitz, *Die verlorenen Schriften des A.* pp. 180, 211). In *Phys.* II. 2. 194 a 36 εἰρηται δ' ἐν τοῖς περὶ φιλοσοφίας the reference, on the other hand, is to a dialogue written by A. himself. διωρίσθη. With what follows cf. *Metaph.* 1090 b 20—24.

b 19. αὐτὸ μὲν τὸ ζῶον, sc. the universe, which is explicitly termed a "living thing" or "organism" (ζῶον) in the *Timaeus* (cf. e.g. 30 B τόνδε τὸν κόσμον ζῶον ἐμψυχον ἐννουν τε, and many other passages). Cf. *Them.* 12, I H., 21, 10 Sp. τὸ μὲν οὖν αὐτοζῶον, τουτέστι τὸν κόσμον τὸν νοητόν, ἐκ τῶν πρώτων ἐποίων ἀρχῶν, τὰ δὲ ἐπὶ μέρους [sc. ζῶα] ἐκ τῶν ὑφειμένων· ὅσπερ γὰρ τὰ αἰσθητὰ ἔχει πρὸς ἀλλήλα, οὕτω καὶ τὰς ιδέας αὐτῶν πρὸς ἀλλήλας ἔχειν.

b 20. τῆς τοῦ ἐνὸς ιδέας, the idea of the One. In Greek mathematics one, though an ἀρχὴ ἀριθμῶν, is not itself a number (*Metaph.* 1088 a 4—8): τὸ ἐν καὶ οἱ ἀριθμοὶ is a stereotyped phrase. τοῦ πρώτου μήκους. The idea-number Two: as Three is the πρῶτον πλάτος and Four the πρῶτον βάθος. In this phase of Platonism the attempt was made to derive the three dimensions of space from the idea-numbers Two, Three and Four. *Metaph.* 992 a 10 sqq.: cf. 992 b 13 sqq., 1085 a 7 sqq., and, most explicitly, 1090 b 21 ποιοῦσι γὰρ [sc. οἱ τὰς ιδέας τιθέμενοι] τὰ μεγέθη ἐκ τῆς ὕλης καὶ ἀριθμοῦ, ἐκ μὲν τῆς

δυάδος τὰ μήκη, ἐκ τριάδος δ' ἴσως τὰ ἐπίπεδα, ἐκ δὲ τῆς τετράδος τὰ στερεὰ ἢ καὶ ἐξ ἄλλων ἀριθμῶν. Them. 11, 30 H., 20, 26 Sp. ἐπειδὴ γὰρ ἐν τῷ νοητῷ κόσμῳ δεῖ πάντως τὰς ἀρχὰς παρεμφαίνεσθαι τοῦ αἰσθητοῦ, ὁ δὲ αἰσθητὸς ἐκ μήκους ἤδη καὶ πλάτους καὶ βάθους, τοῦ μὲν μήκους ἰδέαν εἶναι τὴν πρώτην ἀπεφάναντο δυάδα· ἀπὸ γὰρ ἑνὸς ἐφ' ἐν τὸ μήκος, τουτέστιν ἀπὸ σημείου ἐπὶ σημείον· τοῦ δὲ μήκους ἅμα καὶ πλάτους τὴν πρώτην τριάδα· πρῶτον γὰρ τῶν ἐπιπέδων σχημάτων ἐστὶ τὸ τρίγωνον. Cf. *Μεταφρ.* 1036 b 13 καὶ τῶν τὰς ἰδέας λεγόντων οἱ μὲν αὐτογραμμὴν τὴν δυάδα, οἱ δὲ τὸ εἶδος τῆς γραμμῆς· ἔνια μὲν γὰρ εἶναι ταῦτα τὸ εἶδος καὶ οὐ τὸ εἶδος, οἷον δυάδα καὶ τὸ εἶδος δυάδος· ἐπὶ γραμμῆς δ' οὐκέτι. Duality is assumed by A. as an equivalent for the formal cause of the straight line 429 b 20 ἔστω γὰρ δυάς [sc. τὸ εὐθεῖ εἶναι].

b 21. τὰ δ' ἄλλα. If we may follow *Τίμαιος* 30 c, D these will be the genera and species of living things included in the universe οὐ δ' ἐστὶ ἄλλα ζῶα καθ' ἐν καὶ κατὰ γένη μόρια, τούτῳ πάντων ὁμοιότατον αὐτὸν εἶναι τιθῶμεν. τὰ γὰρ διὰ νοητὰ ζῶα πάντα ἐκείνῳ ἐν ἑαυτῷ περιλαβὼν ἔχει, καθάπερ ὅδε ὁ κόσμος ἡμᾶς ὅσα τὸ ἄλλα θρέμματα ξυνέστηκεν ὁρατά. Them. 12, 1 H., 21, 10 Sp. τὸ μὲν οὖν αὐτοζῶον... ἔχειν [cited above in note on b 19 αὐτὸ μὲν τὸ ζῶον].

b 21. ἐτι δὲ καὶ ἄλλως: τὸν αὐτὸν δὴ τοῦτον λόγον μετῆσαν is the supplement of Them. (12, 5 H., 21, 14 Sp.). The world of objects which the soul knows having been derived from idea-numbers it remained to show that the faculties which soul is assumed to employ for apprehending these objects admit of a similar deduction, in other words that soul has *νοῦς* in it from the idea of Unity, *ἐπιστήμη* from the idea-number Two, *δόξα* from Three, Sense-perception from Four. The soul which knows, as well as the things which are known, is ultimately constituted by idea-numbers. Mr Shorey (*A. J. Ph.* XXII. 152) protests against associating these 'fooleries of Xenocrates,' as he calls them, with the teaching of Plato himself.

b 22. μοναχῶς. Philop. 79, 26 glosses μοναχῶς by οὐκ ἄλλοτε ἄλλως. In Euclid's language there can only be *one* straight line between any two points: in other words, from any point there is only *one* way of going to any other single point (ἐφ' ἐν), Them. 11, 33 H., 21, 2 Sp. ἀπὸ γὰρ ἑνὸς ἐφ' ἐν τὸ μήκος, τουτέστιν ἀπὸ σημείου ἐπὶ σημείον as already cited on b 20 *supra*, *ib.* 12, 8 H., 21, 18 Sp. τὴν δὲ ἐπιστήμην ἐκ τῆς πρώτης δυάδος [sc. τὴν ψυχὴν ἔχειν διωρίζοντο]· ἀφ' ἑνὸς γὰρ ἐφ' ἐν καὶ ἡ ἐπιστήμη, ἀπὸ γὰρ τῶν προτάσεων ἐπὶ τὸ συμπέρασμα. Cf. 407 a 26—9.

b 23. τὸν δὲ τοῦ ἐπιπέδου ἀριθμὸν δόξαν. Cf. Them. 12, 9 H., 21, 21 Sp. τὴν δόξαν δὲ ἐκ τῆς πρώτης τριάδος, ὅσος ἦν καὶ τοῦ ἐπιπέδου ἀριθμός. According to Them. (12, 10 H., 21, 22 Sp.) this was because the triangle is the first, or most elementary of plane figures: τῆς γὰρ δόξης ἤδη καὶ τὸ ἀληθές καὶ τὸ ψεῦδος ἐκ τῶν προτάσεων. So Philop. 79, 28 sqq. τὸν δὲ τρία ἀριθμὸν τῇ δόξῃ ἀπένειμεν· οὐ γὰρ μοναχῶς ἡ δόξα γίνεται ὥσπερ ἡ ἐπιστήμη· ἔστι γὰρ καὶ ἀληθὴς δόξα καὶ ψευδής, ἐπιστήμη δὲ πᾶσα ἀληθής.

b 23. αἰσθησιν δὲ τὸν τοῦ στερεοῦ. Cf. Them. 12, 11 H., 21, 24 Sp. αἰσθησιν δὲ ἀπὸ τῆς πρώτης τετράδος ἐξ ἧς καὶ ἡ τοῦ στερεοῦ σώματος ἰδέα· περὶ γὰρ τὸ τοιοῦτον σῶμα ἡ αἰσθησις. At first this explanation seems strangely out of keeping with what precedes. But a clue to its meaning and at the same time a proof of its correctness is furnished by *Λaws* 894 A. Plato asks, "What are the conditions of all becoming?" and replies ὁλόν, ὡς ὅπταν ἀρχὴ λαβοῦσα αὔξην εἰς τὴν δευτέραν ἔλθῃ μετὰβασιν καὶ ἀπὸ ταύτης εἰς τὴν πλησίον, καὶ μέχρι τριῶν ἐλθοῦσα αἰσθησιν σχῆν τοῖς αἰσθανομένοις. μεταβάλλον μὲν οὖν οὕτω καὶ μετακινούμενον γίγνεται πᾶν· ἔστι δὲ ὅντως ὄν, ὅπταν μὲν· μεταβαλὼν δὲ εἰς ἄλλην ἕξιν διέφθαρται παντελῶς. The mathematical character of the language

would be apparent even if A. had not told us that Plato eschewed the term "point" and preferred to speak of "origin of a line," ἀρχὴ γραμμῆς (*Metaph.* 992 a 21), just as modern geometry calls a point the "origin" of coordinates. The point, receiving increase, grows or develops into the line, the second stage or μετὰβασις; from that it passes to the next stage, for a line by its motion generates a superficies (409 a 4 sq.): by the fourth stage it reaches three dimensions and is perceptible to sense. Here, as in *Tim.* 53 C—57 D, Plato substitutes a mathematical deduction of body for a physical deduction. The world of becoming is a fleeting show, a phantasmagoria: all the reality in which it shares is derived from its πέρατα, point, line, surface and solid (*Metaph.* 1028 b 16 sqq.). By what arguments this conclusion was recommended may still be seen in *Metaph.* 1001 b 26—1002 a 14. Cf. also *Metaph.* 1089 a 31 sqq. φαίνεται δὲ ἡ ζήτησις πῶς πολλὰ τὸ ὄν τὸ κατὰ τὰς οὐσίας λεγόμενον· ἀριθμοὶ γὰρ καὶ μήκη καὶ σώματα τὰ γεννώμενά ἐστιν. Bonitz in his commentary (p. 576) assumes that Plato is here criticised. How much of the views criticised in *Metaph.* M., cc. 6—10, N., cc. 1—6 belongs to Plato himself, how much to his school, it is very hard to determine.

b 24 οἱ μὲν γὰρ... 25 ἐκ τῶν στοιχείων. Cf. *Metaph.* 1078 b 9—12, 1080 a 12—14, where it is implied that in Plato's teaching there was first a period in which the ideas were quite distinct from numbers, and later a period in which they were presented as virtually numbers. Of this later phase there is apparently no trace in the extant dialogues. The subject of εἰσὶ is still οἱ ἀριθμοί. We might paraphrase thus: The numbers were affirmed to be just what the ideas had (always) been, and, whereas other philosophers had chosen material principles as principles of all existence, Plato made them numbers, only they were not ultimate, but were themselves constituted of component elements (στοιχεῖα). This phase of Platonism, in which the idea is a number and at the same time, as an-idea, the cause of being for particulars is attested *Metaph.* 1090 a 5 εἴπερ ἕκαστος τῶν ἀριθμῶν ἰδέα τις, ἡ δ' ἰδέα τοῖς ἄλλοις αἰτία τοῦ εἶναι ὃν δὴ ποτε τρόπον· ἔστω γὰρ ὑποκείμενον αὐτοῖς τοῦτο. A. himself admits there the efficiency of the ideas as causes on this view (ib. a 4) τῷ μὲν γὰρ ἰδέας τιθεμένῳ παρέχονται τιν' αἰτίαν τοῖς οὐσιν. This is probably an exaltation of Plato at the expense of Xenocrates, who is the object of the polemic 1090 a 7—15. A. usually mentions two στοιχεῖα of idea-numbers. The first is always unity, the second, the μὴ ἓν (*Metaph.* 1001 b 23), is variously called the indeterminate or the unequal two, ἀόριστος δυνάς (*Metaph.* 1081 a 14 sq.), ἀνισος δυνάς or ἀνισον (*Metaph.* 1087 b 5, 7, 11, 1089 b 10 sqq.), appearing sometimes as great-and-small, sometimes as much-and-little etc. according as magnitude or number is the product. By these elements or ultimate causes of the ideas or idea-numbers, however designated, we may understand unity and plurality: *Metaph.* 1001 b 19 ἀλλὰ μὴν καὶ εἴ τις οὕτως ὑπολαμβάνει ὥστε γενέσθαι, καθάπερ λέγουσιν τινες, ἐκ τοῦ ἑνὸς αὐτοῦ καὶ ἄλλου μὴ ἑνός τινος τὸν ἀριθμόν, οὐδὲν ἤττον ζητητέον διὰ τί καὶ πῶς ὅτε μὲν ἀριθμὸς ὅτε δὲ μέγεθος ἔσται τὸ γενόμενον, εἴπερ τὸ μὴ ἓν ἡ ἀνισότης καὶ ἡ αὐτὴ φύσις ἦν. One consequence of assuming elements from which the idea-numbers were derived did not escape criticism: being derived, the idea-numbers are posterior to the elements from which they are derived, and A. objects that there are entities ἃ μᾶλλον βούλονται εἶναι... τοῦ τὰς ἰδέας εἶναι: cf. *Metaph.* 1079 a 14—19, 990 b 17—22.

b 25. κρίνεται δὲ τὰ πράγματα. This distinction of four faculties correlating with four classes of object is found in slightly varying forms in several Platonic dialogues. In the *Republic* 509 E—511 E the main division is into νοητὰ and ὁρατὰ and thus the former are divided into objects of pure reason (νόησις) and

objects of understanding (*διάνοια*), while things visible or, more comprehensively, sensible objects, are subdivided into objects of belief (*πίστις*) and objects of conjecture (*εἰκασία*): where, however, *πίστις* and *εἰκασία* seem to be but species of *δόξα*. Thus in the *Republic* at any rate the spheres of opinion (*δόξα*) and sense-perception (*αἴσθησις*) are not regarded as mutually exclusive. When we get to the *Timaeus* we have again, first, a dual division of objects (51 B sqq.), intelligible realities and sensible phenomena, inferred from the irreconcilable distinction between *νοῦς* and *δόξα ἀληθής*. The latter class of objects, sensibles, are in the same passage (52 A), however, described as apprehended by opinion with the help of sense-perception (*δόξη μετ' αἰσθήσεως*). And in 37 B, C we have apparently the full fourfold division of faculties *νοῦς... ἐπιστήμη τε... δόξα καὶ πίστις*.

b 27. εἶδη δ'... τῶν πραγμάτων, "forms of things," in A.'s technical sense of *εἶδος*. A. adds this remark in order to make clearer the nature of the numbers first introduced in b 20 sqq.: hence οὗτοι, "with which we have been dealing in this account of the Platonic views." It adds nothing to the previous remark b 24 οἱ μὲν γὰρ ἀριθμοὶ τὰ εἶδη αὐτὰ καὶ αἱ ἀρχαὶ ἐλέγοντο, except that τῶν πραγμάτων is appended to εἶδη. It seems unlikely at first sight that A. should describe the idea-numbers in the terms of his own system as forms of things. But, if we give εἶδη the Platonic sense, it is misleading to speak of "ideas of things" without qualification. It is true that in *Metaph.* 987 b 7, 1078 b 31, τὰ τοιαῦτα τῶν ὄντων ἰδέας προσηγόρευσε, Bonitz joins τῶν ὄντων with ἰδέας, but he does so without warrant from Alex. Aphr. and τὰ τοιαῦτα is more naturally taken with τῶν ὄντων. The more correct phrase πάντων ἰδέας εἶναι τῶν καθόλου λεγομένων occurs *Metaph.* 1078 b 33. Cf. 990 b 7, 12. Them., however, has no scruple in writing (11, 27 H., 20, 20 Sp.) εἶδη τῶν ὄντων and even (12, 3 H., 21, 13 Sp.) τὰς ἰδέας αὐτῶν [sc. τῶν αἰσθητῶν].

b 27 ἐπεὶ δὲ... 28 γνωριστικὸν οὕτως. With this punctuation οὕτως = τῷ ἔκ τῶν στοιχείων εἶναι, so that it limits the sense of γνωριστικόν. Torstrik cites for a similar use of οὕτως *Metaph.* 1053 a 13 καὶ ταῦτα πάντα ἐν τι οὕτως, οὐχ ὡς κοινόν τι τὸ ἐν, ἀλλ' ὥσπερ εἴρηται. The punctuation of οὕτως 1051 b 35, where Bekker put the comma before, and Christ after, οὕτως, presents a similar problem. Cf. Maier, *Syllogistik* I. p. 20, n. 2.

b 28. ἐνιοί, namely Xenocrates: cf. *infra*. 408 b 32 sqq.: quum substantia eorum quae sunt numerus sit, cognoscatur vero simile simili, cognoscat vero anima, sequitur ut anima numerus sit (Torst. p. 117).

b 30. διαφέρονται δέ. Thus under the conception of soul as cognitive and therefore related to the principles of things are collected philosophers as dissimilar as Empedocles and Plato. While they agree in reducing the soul to elements or principles they are not agreed on the fundamental question what these elements or principles are and how many of them must be assumed.

b 31. τοῖς ἀσωμάτοις, int. ποιούσι.

405 a 1. τούτοις, int. διαφέρονται. ἀπ' ἀμφοῖν, i.e. from both corporeal and incorporeal principles. Empedocles and Anaxagoras are instanced by Simpl. (30, 30) and Philop. (82, 20), who consider the Intelligence of the latter, as well as the Love and Strife of the former, to be incorporeal.

a 3. ἐπομένως δὲ τούτοις, conformably with these various assumptions, i.e. the assumptions made by each philosopher as to the nature and number of the principles of things. Their view of the soul was coloured by their view of the universe; the ἀρχαὶ and στοιχεῖα of the one correspond to the ἀρχαὶ and στοιχεῖα of the other. A. implies that this correspondence holds, not only when cognition is taken to be the primary characteristic of soul, but quite as much when soul is regarded, e.g. by Democritus, as the moving principle.

a 4. τό τε γάρ κινητικὸν τὴν φύσιν τῶν πρώτων ὑπειλήφασιν. With Bonitz (*Hermes* VII. p. 419 sqq.) join τῶν πρώτων which is a partitive genitive with τὸ κινητικὸν and supply after ὑπειλήφασιν τὴν ψυχὴν or τὴν ψυχὴν εἶναι. By τὸ κινητικὸν τὴν φύσιν τῶν πρώτων is meant ἐκείνο τῶν πρώτων ὃ ἐστὶ κινητικὸν τὴν φύσιν: they conceived the soul to be that amongst first principles or primary elements which is by its nature capable of causing motion, i.e. they too, as well as those who explained the soul from cognition, assumed the soul to be the one element or one of the elements of things: they selected an element by its nature adapted to produce motion, and declared soul to be that element. The elements of the early philosophers, their πρῶτα or ἀρχαί, corresponded more or less exactly to A.'s material cause. But sometimes a distinction was drawn between some elements which were inert, and one (or more) which was active and able to move the rest. The best commentary is furnished by *Metaph.* 984 b 1 where, as here, A. is dealing with the early philosophers, whether they assumed a single first principle or a plurality, and remarking the scarcely discernible trace of a motive cause in such systems τῶν μὲν οὖν ἐν φασκόντων εἶναι τὸ πᾶν οὐδενὶ συνέβη τὴν τοιαύτην [int. τὴν ἑτέραν ἀρχὴν ὡς ἂν ἡμεῖς φαίμεν, ὅθεν ἡ ἀρχὴ τῆς κινήσεως] συνιδεῖν αἰτίαν, πλὴν εἰ ἄρα Παρμενίδῃ [in τὰ πρὸς δόξαν, where he apparently admits two principles]...(b 5) τοῖς δὲ δὴ πλείω ποιοῦσι μᾶλλον ἐνδέχεται λέγειν, οἷον τοῖς θερμὸν καὶ ψυχρὸν ἢ πῦρ καὶ γῆν· χρώνται γὰρ ὡς κινητικὴν ἔχοντι τῇ πυρὶ τὴν φύσιν, ὕδατι δὲ καὶ γῇ καὶ τοῖς τοιοῦτοις τοῦναντίον. Cf. 983 b 7 sqq.

An alternative would be to take τῶν πρώτων as predicate with ὑπειλήφασιν, by the same construction as that of τῶν καλῶν (402 a 1): and so the Greek commentators. "They supposed that what in its own nature is capable of causing motion is one of the primary causes." If the words are so taken, then, since they regarded the soul as capable by its own nature of causing motion, it follows that the soul is one of the primary causes: Them. (13, 7 H., 23, 15 Sp.) εὐλογον γὰρ καὶ λίαν πιθανὸν τὴν κινητικωτάτην αἰτίαν ἐν ταῖς πρώταις ἀρχαῖς κατατάττειν. Cf. *Philop.* 82, 36 and *Simpl.* 30, 33 sqq. Bonitz objects that it is the ἀρχὴ which determines what the soul is, and not the soul which determines what the ἀρχὴ shall be (405 a 3 ἐπομένως τοῦτοις). This is clear from the parallel case of those who explained the soul as cognitive. Quite apart from this, the passage cited from *Metaph.* 984 b 1 sqq. seems conclusive as against such a recognition of the moving principle, at any rate by the earlier Ionian philosophers, who nevertheless are subsequently adduced as considering soul from the side of motivity, e.g. Thales, Diogenes, Heraclitus. By τῶν πρώτων we are to understand the first causes (αἰτία) or principles (ἀρχαί) or elements (στοιχεῖα) which the philosophers in question assumed, and these, as we have seen above, were generally what A. calls material causes, e.g. the atoms are τὰ πρῶτα of Democritus, cf. *Meteor.* I. 1. 338 a 20 τὰ πρῶτα αἰτία τῆς φύσεως, *Phys.* VIII. 9, 265 b 27 τῶν δ' ἄλλων (sc. κινήσεων) οὐδεμίαν ὑπάρχειν τοῖς πρώτοις ἀλλὰ τοῖς ἐκ τούτων οἴονται, *Metaph.* 982 a 26 ἐπιστῆμαι αἱ μάλιστα τῶν πρώτων εἰσίν, *Anal. Post.* I. 2, 72 a 6 ταὐτὸ γὰρ λέγω πρώτον καὶ ἀρχὴν, *Top.* IV. 1, 121 b 9 ἡ τε γὰρ ἀρχὴ πρώτον καὶ τὸ πρῶτον ἀρχή, *Metaph.* 1013 a 2 ἀπὸ τοῦ πρώτου καὶ τῆς τοῦ πράγματος ἀρχῆς. Lastly, as to τε γάρ, it is probable that this should be added to the passages in A. where τε γάρ=etenim. See Shilleto *Dem. De Falsa Leg.* § 176. *Ind. Ar.* 750 a 13 relinquuntur certe loci quidam, in quibus coniunctis particulis τε γάρ non aliam apparet vim inesse quam simplici γάρ vel καὶ γάρ veluti *Pol.* 1333 a 2, 1318 b 32 sqq., *Post. Anal.* I. 9, 75 b 41, *De Part. An.* III. 1, 661 b 28. Cf. *Bz. Ztschr. f. öst. Gym.* 1867, pp. 672—682.

a 5. ὅθεν. This must go back to a 3 ἐπομένως δὲ τοῦτοις. The general



agreement between the choice of ἀρχαὶ and the explanation of soul applies particularly in the case of fire. In *Metaph.* A., c. 8, Aristotle is criticising those who assumed a single material principle, corporeal and extended, 988 b 22 ὅσοι μὲν οὖν ἔν τε τὸ πᾶν καὶ μίαν τινὰ φύσιν ὡς ὕλην τιθέασιν, καὶ ταύτην σωματικὴν καὶ μέγεθος ἔχουσιν. He remarks that the transformation of the ἀπλᾶ σώματα may be regarded as the effect either of σύγκρισις or of διάκρισις. The former view requires in strict consistency that fire as being μικρομερέστατον and λεπτότατον should be taken for the primary element, 988 b 32 τὰ μὲν γὰρ [sc. τῶν ἀπλῶν σωμάτων] συγκρίσει, τὰ δὲ διακρίσει ἐξ ἀλλήλων γίνεσθαι, τοῦτο δὲ πρὸς τὸ πρότερον εἶναι καὶ ὕστερον διαφέρει πλείστον. τῇ μὲν γὰρ ἂν δόξειε στοιχειωδέστατον εἶναι πάντων ἐξ οὗ γίνονται συγκρίσει πρώτου, τοιοῦτον δὲ τὸ μικρομερέστατον καὶ λεπτότατον ἂν εἴη τῶν σωμάτων. διόπερ ὅσοι πῦρ ἀρχὴν τιθέασιν μάλιστα ὁμολογούμενους ἂν τῷ λόγῳ τοῦτω λέγοιεν. πῦρ εἶναι, int. τὴν ψυχὴν.

a 6 λεπτομερέστατον τε καὶ...7 ἀσώματον, int. ἐστίν. Καὶ explicative. A. cannot mean that fire is incorporeal absolutely or in the strict sense of the term, but only that it is so relatively to the other three ἀπλᾶ σώματα air, water and earth. The same meaning must be given to 405 a 7 ἀσώματον, 405 b 12 ἀσωμάτω and 409 b 21 τὸ ἀσωματότατον τῶν ἄλλων. Cf. Philop. 83, 27 ἀσώματον δὲ εἶπε τὸ πῦρ, οὐ κυρίως ἀσώματον (οὐδεὶς γὰρ αὐτῶν τοῦτο ἔλεγε), ἀλλ' ὡς ἐν σώμασιν ἀσώματον [fort. leg. ὅν] διὰ λεπτομέρειαν.

a 7. ἔτι δὲ κινεῖται τε καὶ κινεῖ τὰ ἄλλα πρώτως. Not only is fire the element most suitable for ἀρχή or material principle, if we put ourselves in the position of the early philosophers accepting their presuppositions and the explanation of γένεσις by σύγκρισις: it further appears (ἔτι) that fire satisfies the condition laid down above (403 b 29) καὶ μάλιστα καὶ πρώτως ψυχὴν εἶναι τὸ κινεῖν, which, as we there saw, under the same presuppositions involved the assumption τῶν κινουμένων τι τὴν ψυχὴν εἶναι. For πρώτως see on 403 b 29.

a 8. γλαφυρωτέρως. The term implies praise (Philop. 84, 9). It is used of Charondas *Pol.* 1274 b 8 Χαρόνδρας τῇ ἀκριβείᾳ τῶν νόμων ἐστὶ γλαφυρώτερος καὶ τῶν νῦν νομοθετῶν, and the Cretan constitution is said to be "less neatly finished" than that of Sparta 1271 b 21 ἦττον γλαφυρῶς ἔχει, for which cf. 1271 b 24 ἦττον διήθρηται: *De Part. An.* II. 4. 650 b 18 συμβαίνει δ' ἐνὶ γὰ καὶ γλαφυρωτέραν ἔχει τὴν διάνοιαν τῶν τοιούτων, in certain animals intelligence attains a more finished perfection. A. was fully alive to the relative superiority of Democritus so far as purely physical explanations are concerned. Cf. *De Gen. et Corr.* I. 2, 315 a 34—b 1, 316 a 5 sqq., 325 a 28. In Zeller's words "he explained all phenomena in a strictly scientific manner from the same principles." Cf. Dyroff, *op. cit.*, p. 79, pp. 116—122.

a 9. διὰ τί τοῦτων ἑκάτερον, int. συμβέβηκεν (as in 413 b 10): why the soul (1) is λεπτομερέστατον and (2) κινεῖται τε καὶ κινεῖ. The common view that the power to impart motion implies mobility (cf. 403 b 29) was shared by the Atomists (404 a 7—9), so that these two attributes need not be separated: but the fineness of the texture or structure of a body has a limit in the indivisibility of the atoms of which it is composed. This I take to be the point of the words a 10, τοῦτο δ'...σωμάτων. Having thus proved (1) A. goes on to prove (2), a 10—13 κινητικὸν δὲ...πῦρ. The Greek commentators were divided. Simpl. (31, 8 sqq.) apparently took τοῦτων to mean τοῦ γνωριστικοῦ καὶ τοῦ κινητικοῦ, a view adopted by Zeller, *Phil. der Griech.* I.<sup>5</sup> p. 902, n. 4. When we find below (405 a 17) that A. himself uses ἄμφω and adds an explanation τό τε γινώσκειν καὶ τὸ κινεῖν, it is natural to explain ἑκάτερον here in the same way, viz., cognition and motivity. But the plain sense of a 9—13 excludes this explanation, nothing being there said of cognition, while both the motive and

mobile qualities of fire and of the soul are there attributed to the minuteness and the spherical shape of the atoms of which they are composed. On the other hand Them. (13, 11 sqq. H., 23, 20 sqq. Sp.) and Philop. (84, 10 sqq.) understand *ἐκότερον* to mean simply (1) *τὸ κινεῖν* and (2) *τὸ κινεῖσθαι*: and the proof of these attributes is certainly contained in a 9—13. The words of Them. are *Δημ. ἐκότερον...ἐδείκνυ, τὸ μὲν κινεῖν διὰ τὴν σμικρομέρειαν, τὸ δὲ κινεῖσθαι διὰ τὸ σχῆμα· ἀμφω γὰρ οἵεται ὑπάρχειν ταῖς σφαιροειδέσιν ἀτόμοις*. But the superiority of Atomism over other physical theories is that it can explain both facts: the finest atoms account for the fineness of a material structure, spherical atoms for mobility and therefore for motive power.

a 10. *τοῦτο δ' εἶναι...σωμάτων*. The neuter *τοῦτο* seems influenced by the preceding *ταῦτό*. Cf. 430 a 23, where the change from masculine to neuter is due to *τοῦθ' ὅπερ ἐστί*. To insert the preposition *ἐκ* after *εἶναι* with some MSS. would, as Torstrik explains, not so well accord with the view expounded 404 a 10—16: *nam id quod constat ex elementis, quodammodo diversum est ab iis: elementa enim plura, hoc unum est*. At Democritus *animam esse voluit potius ipsa rudia elementa nullo unitatis vinculo comprehensa*. The atoms are now designated *σώματα*, above (404 a 2, 7) they were called "shapes" or "figures," and below (406 b 20 sq.) they are called "indivisible spheres."

a 11. *λεπτομέρειαν*. If this is the genuine reading, we may trace a connexion with the view of Democritus as reported by Theophrastus *De Sensibus* 75 (Diels *Doxogr.* 521, 24), probably in reference to the fusing of metals, that things which are red hot are not so hot as those at a white heat (*θερμὸν γὰρ τὸ λεπτόν*), the rapid motion of the finest particles thus generating both white colour and intense heat. Philop. 84, 21—85, 16 conjectures that in making spherical atoms *μικρομερέστατας* Dem. was guided by the geometrical proposition that of all solids with equal surface the sphere encloses the greatest mass.

a 12. *τοιούτων*, i.e. *σφαιροειδές*. Cf. 404 a 2, 6.

a 14. *πρότερον*, viz. 404 b 1—6, where see notes. *χρήται δ' ἀμφοῖν ὡς μιᾷ φύσει*: *ἀμφοῖν* refers to *ψυχή* and *νοῦς*, which according to 404 b 1—3 Anaxagoras sometimes distinguished, sometimes confused. Here A. virtually admits that Anaxagoras treated them as identical, as two different terms for one and the same objective entity. The word *φύσις* in A. sometimes denotes vaguely an entity or thing, e.g. *Metaph.* 1052 b 12 *πράγμα τι καὶ φύσις*. It is used of a faculty in the soul, *Eth. Nic.* 1102 b 13 *ἄλλη τις φύσις τῆς ψυχῆς ἄλογος*, of A.'s causes, especially the material cause, 983 b 13, 17, 988 b 22, and the final cause 988 b 12, of the category of relation 1089 b 7, 1089 a 13, even of Not-being itself 1089 a 19 *ταύτην τὴν φύσιν λέγει τὸ οὐκ εἶναι*. Sometimes it is almost periphrastically joined with a genitive, e.g. *την τοῦ αἵματος φύσιν*, the entity which is blood, 416 a 9 *ἡ τοῦ πυρὸς φύσις*. There is a close parallel to the language here in *Metaph.* 985 a 33 *οὐ μὴν χρήται γε* [sc. Empedocles] *τέτταρσιν, ἀλλ' ὡς δυὸν οὐσί μόνους, πυρὶ μὲν καθ' αὐτό, τοῖς δ' ἀντικειμένοις ὡς μιᾷ φύσει, γῇ τε καὶ ἀέρι καὶ ὕδατι*.

a 15. *πλὴν ἀρχὴν γε*. In his own account of the evolution of the world from chaos Anaxagoras uses the term *νοῦς* and not *ψυχή* (as to Plato *Crat.* see note on 404 b 1 *συμπρ.*). From *Metaph.* 984 b 20—22 *οἱ μὲν οὖν οὕτως ὑπολαμβάνοντες...τοῖς οὐσί* it appears that A. regarded this *νοῦς* of Anaxagoras as at once a final and a moving cause, though at the same time he complains (985 a 18—20) of the inadequate use which Anaxagoras made of his principle.

a 15. *μάλιστα πάντων*. I take this, with Simpl. 31, 18 and Philop. 85, 34, as a stronger *μάλιστα* (cf. e.g. *Metaph.* 991 a 8, 1001 a 22 and *πάντων ἡκιστα* 1088 a 23),

just as παντός μᾶλλον is an emphatic μᾶλλον, both expressions being favourites with Attic writers, especially Plato. Themistius, however (13, 16 H., 23, 28 sq. Sp.), gives a different turn to the sentences, paraphrasing thus: ἀρχὴν φησι σχεδόν τι τῶν ὄντων ἀπάντων. It is quite easy to see how he reached this interpretation. If νοῦς is described by Anaxagoras as "divisible and as 'inhabiting some things,' i.e. all things which have life," clearly it does not so inhabit all things whatever. Thus Them. must have conceived ἀρχή in the sense of internal principle, ἐνυπάρχον τι or στοιχείον. It is most improbable, however, that A. intended ἀρχή to bear this sense, it must mean what it means below a 18, what in 404 b 2 is expressed by τὸ αἴτιον τοῦ καλῶς καὶ ὀρθῶς, and ἀρχή standing alone, as in a 18, would be sufficient to indicate this. In any case μάλιστα should not be separated from πάντων, as if the former word went with τίθεται in the sense of *protissimum* and the latter with ἀρχή. As to ἀπάντων, the variant of codd. Sy, the testimony of Them. is of little weight, as he is very fond of changing πᾶς of the text into ἅπας, as anyone may easily verify for himself.

a 16 μόνον γοῦν... 17 καθαρὸν, "at all events he asserts that mind and mind alone of all things that are is simple, unmixed and pure." Cf. Anax. frag. 12 D. This long fragment begins thus: τὰ μὲν ἅλλα παντὸς μοῖραν μετέχει, νοῦς δὲ ἐστὶν ἄπειρον καὶ αὐτοκρατὲς καὶ μέμικται οὐδενὶ χρήματι, ἀλλὰ μόνος αὐτὸς ἐφ' ἑαυτοῦ ἐστίν. εἰ μὴ γὰρ ἐφ' ἑαυτοῦ ἦν, ἀλλὰ τεφ' ἐμέμικτο ἄλλω, μετείχεον ἂν ἀπάντων χρημάτων, εἰ ἐμέμικτό τεφ'. ἐν παντὶ γὰρ παντὸς μοῖρα ἔνεστιν, ὥσπερ ἐν τοῖς πρόσθεν [fr. II] μοι λέλεκται. καὶ ἂν ἐκόλυεν αὐτὸν τὰ συμμειγμένα, ὥστε μηδενὸς χρήματος κρατεῖν ὁμοίως ὥς καὶ μόνον ἔοντα ἐφ' ἑαυτοῦ. ἔστι γὰρ λεπτότατόν τε πάντων χρημάτων καὶ καθαρώτατον καὶ γνώμην γε περὶ παντὸς πᾶσαν ἴσχει καὶ ἴσχυει μέγιστον. καὶ ὅσα γε ψυχὴν ἔχει καὶ μείζω καὶ ἐλάσσω, πάντων νοῦς κρατεῖ. καὶ τῆς περιχώρησις τῆς συμπάσης νοῦς ἐκράτησεν, ὥστε περιχωρῆσαι τὴν ἀρχήν. καὶ πρῶτον ἀπὸ τοῦ μικροῦ ἤρξατο περιχωρεῖν, ἐπὶ δὲ πλεον περιχωρεῖ, καὶ περιχωρήσει ἐπὶ πλεον. καὶ τὰ συμμισγόμενά τε καὶ ἀποκρινόμενα καὶ διακρινόμενα πάντα ἔγνω νοῦς. καὶ ὅποια ἔμελλεν ἔσσεσθαι καὶ ὅποια ἦν, ἄσφα νῦν μὴ ἔστι καὶ ὅποια ἔστι, πάντα διεκόσμησε νοῦς, καὶ τὴν περιχώρησιν ταύτην, ἣν νῦν περιχωρεῖ τὰ τε ἄστρα καὶ ὁ ἥλιος καὶ ἡ σελήνη καὶ ὁ ἀήρ καὶ ὁ αἰθήρ οἱ ἀποκρινόμενοι. ἡ δὲ περιχώρησις αὐτὴ ἐποίησεν ἀποκρίνεσθαι. καὶ ἀποκρίνεται ἀπὸ τε τοῦ ἀραιοῦ τὸ πυκνὸν καὶ ἀπὸ τοῦ ψυχροῦ τὸ θερμὸν καὶ ἀπὸ τοῦ ζοφεροῦ τὸ λαμπρὸν καὶ ἀπὸ τοῦ διεροῦ τὸ ξηρόν. μοῖραι δὲ πολλὰ πολλῶν εἰσι. παντάπασιν δὲ οὐδὲν ἀποκρίνεται οὐδὲ διακρίνεται ἕτερον ἀπὸ τοῦ ἑτέρου πλὴν νοῦ. νοῦς δὲ πᾶς ὁμοῖός ἐστι καὶ ὁ μείζων καὶ ὁ ἐλάττω. ἕτερον δὲ οὐδὲν ἐστὶν ὁμοῖον οὐδενί, ἀλλ' ὅταν πλείστα ἔνι, ταῦτα ἐνδηλότατα ἐν ἑκάστῳ ἐστὶ καὶ ἦν.

To νοῦς as thus described A. returns *infra*. b 19, 429 a 18—20, b 22 sqq. and its great influence on A.'s own doctrine must be my apology for citing the fragment in full.

a 18. τό τε γινώσκειν. Cf. Anax. frag. 12 D καὶ τὰ συμμισγόμενά τε καὶ ἀποκρινόμενα καὶ διακρινόμενα πάντα ἔγνω νοῦς, and *supra*. καὶ γνώμην γε περὶ παντὸς πᾶσαν ἴσχει, cited in last note. Cf. 429 a 18—20. καὶ τὸ κινεῖν. Anax. frag. 12 D καὶ τῆς περιχώρησις τῆς συμπάσης νοῦς ἐκράτησεν, ὥστε περιχωρῆσαι τὴν ἀρχήν, and frag. 13 D καὶ ἐπεὶ ἤρξατο ὁ νοῦς κινεῖν, ἀπὸ τοῦ κινουμένου παντὸς ἀπεκρίνετο, καὶ ὅσον ἐκίνησεν ὁ νοῦς, πᾶν τοῦτο διεκρίθη κινουμένων δὲ καὶ διακρινόμενων ἡ περιχώρησις πολλῶ μᾶλλον ἐποίει διακρίνεσθαι.

a 19. Θαλής. Cf. 411 a 8, *Metaph.* 983 b 20 sqq., 984 a 2.

a 20. τὸν λίθον, sc. τὸν μάγνητα, the Magnesians stone, the magnet or lodestone, so called from the town (probably the Lydian, though according to Pliny the Thessalian, Magnesia). Cf. Plat. *Ion* 533 D ὥσπερ ἐν τῇ λίθῳ, ἣν Εὐριπίδης

μὲν Μαγνήτιν ὠνόμασεν, οἱ δὲ πολλοὶ Ἑρακλείαν. καὶ γὰρ αὕτη ἡ λίθος οὐ μόνον αὐτοὺς τοὺς δακτυλίους ἀγει τοὺς σιδηροὺς, ἀλλὰ καὶ δύναμις ἐντίθησι τοῖς δακτυλίοις, ὥστ' αὐτὸ δύνασθαι ταῦτον τοῦτο ποιεῖν, ὅπερ ἡ λίθος, ἄλλους ἀγει δακτυλίους, ὥστ' ἐνίοτε ὀρμαθὸς μακρὸς πᾶν σιδηρίων καὶ δακτυλίων ἐξ ἀλλήλων ἥρτηται. Cf. Lucr. vi. 908 sq.

quem Magneta vocant patrio de nomine Grai,

Magnetum quia fit patriis in finibus ortus,

where see Munro's note. Diog. Laert. I. 24 Ἀριστοτέλης δὲ καὶ Ἰππίας φασὶν αὐτὸν [Thales] καὶ τοῖς ἀψύχοις μεταδιδόναι ψυχῆς, τεκμαιρόμενον ἐκ τῆς λίθου τῆς μαγνήτιδος καὶ τοῦ ἡλέκτρον.

a 21. Διογένης, i.e. Diogenes of Apollonia (Diog. Laert. ix. 57): a town in Crete according to Steph. Byz. 106, 13, although Aelian *V. H.* II. 31 referred him to the Phrygian Apollonia. He is ridiculed in the *Clouds* of Aristophanes, 227 sqq. (cf. Diels in *Rhein. Mus.* XLII. 12 sqq.), wrote a *Περὶ φύσεως*, from which Simpl. quotes (*In Physica* 151, 28 sqq., 153, 17, 20), and is criticised by Theophr. *De Sensibus*, 39—45 (*Doxogr. Gr.* p. 510 sqq.). See further concerning him Siebeck, *Gesch. der Psych.* I. 82 sqq., 115 sqq., 132 sqq., 150, Burnet, *Early Greek Philosophers*, p. 359 sqq., Gomperz, *Greek Thinkers*, Bk III. ch. 3, p. 370 sqq., Eng. Tr. The latter regards him as an eclectic influenced by Leucippus and Anaxagoras (Simpl. *In Phys.* 25. 3) in spite of his antagonistic attitude to the main principles of their systems. Cf. Simpl. *In Phys.* 152, 18 [*frag.* 4 D] ἄνθρωποι γὰρ καὶ τὰ ἄλλα ζῶα ἀναπνέοντα ζῶει τῷ ἀέρι. καὶ τοῦτο αὐτοῖς καὶ ψυχὴ ἐστὶ καὶ νόησις, and Simpl. *Phys.* I. 152, 22 [*frag.* 5 D] καὶ μοι δοκεῖ τὸ τὴν νόησιν ἔχον εἶναι ὃ ἀπὸ καλούμενος ὑπὸ τῶν ἀνθρώπων, καὶ ὑπὸ τούτου πᾶντας καὶ κυβερνᾶσθαι καὶ πάντων κρατεῖν· αὐτὸ γὰρ μοι τοῦτο θεὸς δοκεῖ εἶναι καὶ ἐπὶ πᾶν ἀφίχθαι καὶ πάντα διατιθέναι καὶ ἐν παντὶ ἐνεῖναι. καὶ ἔστιν οὐδὲ ἐν ὃ τι μὴ μετέχει τούτου. μετέχει δὲ οὐδὲ ἐν ὁμοίως τὸ ἕτερον τῷ ἑτέρῳ, ἀλλὰ πολλοὶ τρόποι καὶ αὐτοῦ τοῦ ἀέρος καὶ τῆς νόησις εἰσιν. ἔστι γὰρ πολὺτροπος καὶ θερμώτερος καὶ ψυχρότερος καὶ ξηρότερος καὶ ὑγρότερος καὶ στασιμώτερος καὶ δευτέρῃν κίνησιν ἔχων, καὶ ἄλλαι πολλὰ ἑτεροειδῆς ἐνεῖσι καὶ ἡδονῆς καὶ χροῖς ἀπειροὶ κ.τ.λ. See also Beare, *Greek Theories of Elementary Cognition*.

a 21. ἑτεροὶ τινες. Cf. Aetii *Plac.* IV. 3. 2 [*Doxogr. Gr.* 387 b 10] Ἀναξίμενης Ἀναξαγόρας Ἀρχέλαος Διογένης ἀερῶδη [int. τὴν ψυχὴν ἀπεφῆναντο], Theodoret *Graec. aff. Cur.* v. 18 Ἀναξίμενης δὲ καὶ Ἀναξίμανδρος καὶ Ἀναξαγόρας καὶ Ἀρχέλαος ἀερῶδη τῆς ψυχῆς τὴν φύσιν εἰρήκασιν. Aetii *Plac.* I. 3, 4 [Anaximenes *frag.* 2 D *Doxogr. Gr.* 278 a 12, b 8] οἷον ἡ ψυχὴ, φησὶν, ἣ ἡμετέρα ἀπὸ οὐσα συγκρατεῖ ἡμᾶς. In Pl. *Phaedo* 96 B the views πότερον τὸ αἷμα ὅτιν οὐδὲ φρονούμεν, ἢ ὃ ἀήρ, ἢ τὸ πῦρ, are mentioned side by side as familiar to Socrates when engaged in the study of nature. A. is reticent about Anaximenes, who, however, is credited with this view by later authorities, cf. Tertull. *De Anima* c. 9 (secundum quosdam), Macrobi. *Somn. Scipion.* I. 14, 20.

a 23. γινώσκειν τε καὶ κινεῖν τὴν ψυχὴν. That to Diogenes knowledge included all forms of sense-perception is clear from the last words of *frag.* 5 ὅμως δὲ πάντα τῷ αὐτῷ καὶ ζῇ καὶ ὁρᾷ καὶ ἀκούει καὶ τὴν ἄλλην νόησιν ἔχει ἀπὸ τοῦ αὐτοῦ πάντα. The evidence for κινεῖν is not so obvious from the scanty fragments extant, but at the beginning of *frag.* 5 the functions of governing and controlling ὑπὸ τούτου πᾶντας κυβερνᾶσθαι καὶ πάντων κρατεῖν appear to be transferred to air from the νοῦς of Anaxagoras. This would suffice for Aristotle, who has argued above (404 a 25 sqq.) that the Anaxagorean νοῦς is κινητικός (cf. 404 b 8). The following sentence (a 23—5) ἣ μὲν πρῶτον...κινητικὸν εἶναι reads like an inference drawn by A. himself in his constant endeavour to interpret more precisely the vague theories of his predecessors. Cf. 404 b 1 ἦττον διασαφεῖ and the notorious

reconstructions of the Empedoclean and Anaxagorean teaching, *Metaph.* 993 a 15—24, 989 a 30—b 21.

a 26. εἴπερ: cf. the similar clause about Thales a 20. In both cases the sentence with εἴπερ gives the ground of an inference drawn by A. τὴν ἀναθυμίασιν. Probably a term first used by Heraclitus: at any rate the verb occurs in *frag.* 42 Byw., 12 D=Arius Did. (ap. Euseb. in Diels, *Doxographi*, 471, 1 sqq.) Ζήνων τὴν ψυχὴν λέγει αἰσθητικὴν ἀναθυμίασιν, καθάπερ Ἡράκλειτος· βουλόμενος γὰρ ἐμφανίσαι, ὅτι αἱ ψυχαὶ ἀναθυμιάμεναι νοεραὶ αἰεὶ γίνονται, εἴκασεν αὐτὰς τοῖς ποταμοῖς λέγων οὕτως· ποταμοῖσι τοῖσιν αὐτοῖσιν ἐμβαίνουσιν ἕτερα καὶ ἕτερα ὕδατα ἐπιρρεῖ· καὶ ψυχαὶ δὲ ἀπὸ τῶν ὑγρῶν ἀναθυμιάσιν. ἀναθυμίασιν μὲν οὖν ὁμοίως τῷ Ἡρακλείτῳ τὴν ψυχὴν ἀποφαίνει Ζήνων. Hence Bywater concludes: est igitur hoc dictum Zenoni tribuendum, scilicet Heraclitea verba libere citanti inque suum usum accommodanti. Thus, according to Heraclitus, the soul is vapour or heat rising from moisture (Auch die Seelen dünnen aus dem Feuchten hervor, D). As to the grammatical construction, supply from the preceding clause εἶναι φησι ψυχὴν. If, according to Heraclitus, all other things are derived from vapour, vapour is his ἀρχή: if this vapour be identified with soul, then his ἀρχή is soul: which is the same thing as saying that the soul is his ἀρχή. συνίστησιν, “constructs,” i.e. represents as constructed. Cf. *supr.* 404 b 17 ποιεῖ. Heraclitus also called his ἀρχή “fire,” which he does not seem to have clearly distinguished from dry air or heat (Latin *vapor*). Compare the well-known dictum αὕη ψυχὴ σοφωτάτη, *frag.* 74 Byw., 118 D.

a 27. ἀσωματώτατον, as above 405 a 7, relatively incorporeal or least corporeal. τὸ δὲ κινούμενον κινουμένῳ γινώσκεσθαι. A special application of the maxim 404 b 17 γινώσκεσθαι τῷ ὁμοίῳ τὸ ὅμοιον: if the object known be in motion, then the soul by which it is known must also be in motion, ῥέον αἰεὶ.

a 28. ἐν κινήσει δ' εἶναι τὰ ὄντα. For this doctrine cf. Plato, *Crat.* 402 A λέγει πον Ἡράκλειτος, ὅτι πάντα χωρεῖ καὶ οὐδὲν μένει, καὶ ποταμοῦ ῥοῇ ἀπεικάζων τὰ ὄντα λέγει, ὥς δις ἐς τὸν αὐτὸν ποταμὸν οὐκ ἂν ἐμβαίης. Also *Theaet.* 180 D, where the doctrine ὅτι πάντα κινεῖται is ascribed to the later Heracliteans, facetiously styled “philosophers in flux” (τοὺς ῥέοντας), *ib.* 181 A.

a 29. τούτους, i.e. Thales, Diogenes of Apollonia, Heraclitus.

a 29. Ἀλκμαίων of Croton: physician of the 5th century, of whom we learn some interesting particulars, e.g. that he regarded the brain as the seat of sensation, Theophr. *de Sensibus* § 26 (*Doxogr. Gr.* 507), Plut. *Plac.* IV. 17 (Diels, *Doxogr. Gr.* 407, 2). But he distinguished between sense-perception and intelligence, the latter being, according to him, peculiar to man. ἄνθρωπον γὰρ [φησὶ] τῶν ἄλλων διαφέρειν ὅτι μόνον ξυνίησι, τὰ δ' ἄλλα αἰσθάνεται μὲν, οὐ ξυνίησι δέ (*Doxogr. Gr.* 506, 26). See Beare, *op. cit.* p. 251. It is probably Alcmaeon's view which is cited in some detail in *Phaedo* 96 B ἢ τούτων μὲν οὐδέν, ὃ δ' ἐγκέφαλός ἐστιν ὃ τὰς αἰσθήσεις παρέχων τοῦ ἀκουεῖν καὶ ὁρᾶν καὶ ὁσφραίνεσθαι, ἐκ τούτων δὲ γίγνεται μνήμη καὶ δόξα, ἐκ δὲ μνήμης καὶ δόξης, λαβούσης τὸ ἡρεμεῖν, κατὰ ταῦτα γίνεσθαι ἐπιστήμην. The speech of Eryximachus in Pl. *Symph.* 186 B sqq. seems to owe not a little to Alcmaeon.

a 30. ἀθάνατον εἶναι. This tenet is attributed to Alcmaeon by Boethus, apud Euseb. *Praep. Ev.* XI. 28. 5, Diog. Laert. VIII. 83, Stobaeus *Ecl.* I. 49 [*Doxogr. Gr.* 386 b 4 sqq.]: cf. Theodoret *Graec. aff. Cur.* v. 17 [*Doxogr. Gr.* 386 t<sup>b</sup> 6]. On the other hand Alcmaeon held, according to Arist. *Probl.* XVII. 3, 916 a 33, that men are nevertheless perishable beings (ἀπώλλυσθαι) because they cannot join their beginning to their end (ὅτι οὐ δύνανται τὴν ἀρχὴν τῷ τέλει προσάψαι). This means, according to Gomperz, that “if old age

were not merely figuratively but literally a second childhood, men (and animals) would be able to live for ever, since a cycle would be created which could be constantly renewed. But the series of changes suffered at the various periods of human (and animal) life follow a progressive and not a cyclical line" (*Greek Thinkers*, Eng. Tr. I. p. 151).

405 b 1. τὸν οὐρανὸν ὅλον. This term originally meant the firmament, but was naturally employed by philosophers for the world or universe (like κόσμος). In certain passages it is matter of doubt in which of these ways it should be interpreted, e.g. *Metaph.* 986 b 24 εἰς τὸν ὅλον οὐρανὸν ἀποβλέψας τὸ ἐν εἶναι φησι τὸν θεόν (sc. Ξενοφάνης). Cf. the Epicurean criticism in Cic. *De Nat. Deor.* I. 11. 27 Crotoniates autem Alcmaeon, qui soli et lunae reliquisque sideribus animoque praeterea divinitatem dedit, non sensit sese mortalibus rebus immortalitatem dare; Clem. Alex. *Protrept.* 66. 58 P. ὁ γὰρ τοι Κροτωνιάτης Ἀλκμαίων θεοῦς ᾤετο τοὺς ἀστέρας εἶναι ἐμψύχους ὄντας.

b 1. τῶν δὲ φορτικωτέρων καὶ ὕδωρ τινὲς ἀπεφάναντο, int. τὴν ψυχὴν. The term φορτικός is found in *Eth. Nic.* as the opposite of πεπαιδευμένος and χαρίεις, and means approximately "vulgar." As applied intellectually, it serves to censure crude thinking or incapacity to seize distinctions. Thus in *Phys.* I. 2, 185 a 10, 3, 186 a 8 the theory or reasoning (λόγος) of Melissus is called φορτικός, while in *Metaph.* 986 b 27 Melissus himself and Xenophanes are termed ἀγροικότεροι as opposed to Parmenides who is μᾶλλον βλέπων. In *Metaph.* 1001 b 14 the subtler Eleatic Zeno is said φορτικῶς θεωρεῖν. Again, in *De Part. Anim.* II. 7, 652 b 8 those who identify the soul with fire are censured as making a crude assumption (φορτικῶς τιθέντες), as is Hippon here.

b 2. καθάπερ Ἴππων. The fuller form of the name Ἰππῶναξ is preserved Aet. *Plac.* V. 7. 3 (*Doxogr. Gr.* 419 a 24): cf. Anonymi Londin. *Ex Arist. Iatr. Menon. eclogae*, 11, 22 sqq. Ἰππ<ων> [or Ἰππ(ῶναξ)] δὲ ὁ Κροτωνιάτης οἰεῖται ἐν ἡμῖν οἰκίαν εἶναι ὑγρότητα, καθ' ἣν καὶ αἰσθανόμεθα καὶ ἡ ζῶμεν· ὅταν μὲν οὖν οἰκίῳς ἄχῃ ἡ τοιαύτη ὑγρότης, ὑγιαίνει τὸ ζῶον, ὅταν δὲ ἀναξηρανθῇ, ἀναισθητεῖ δὲ τὸ ζῶον καὶ ἀποθνήσκει. διὰ δὲ τοῦτο οἱ γέροντες ξηροὶ καὶ ἀναισθητοί, ὅτι χωρὶς ὑγρότητος ἀναλόγως δὲ τὰ πέλματα ἀναισθητα, ὅτι ἄμοιρα ὑγρότητος. καὶ ταῦτα μὲν ἄχρι τούτου φησὶν. ἐν ἄλλῳ δὲ βιβλίῳ αὐτὸς ἀνὴρ λέγει τὴν κατωνομασμένην ὑγρότητα μεταβάλλειν δι' ὑπερβολὴν θερμότητος καὶ δι' ὑπερβολὴν ψυχρότητος καὶ οὕτως νόσους ἐπιφέρειν, μεταβάλλειν δὲ φησὶν αὐτὴν ἢ ἐπὶ τὸ πλείον ὑγρὸν ἢ ἐπὶ τὸ ξηρότερον ἢ ἐπὶ τὸ παχυμερέστερον ἢ ἐπὶ τὸ λεπτομερέστερον ἢ εἰς ἕτερα, καὶ τὸ αἴτιον οὕτως νοσολογεῖ, τὰς δὲ νόσους τὰς γνωμένας οὐχ ὑπαγορεύει. This important fragment shows that Hippon, like Diogenes of Apollonia, Alcmaeon and Philolaus, was a physician as well as a philosopher, and, like Diogenes of Apollonia, an eclectic adapting one of the older Ionian theories (this time that of Thales) to the newer speculations introduced by Parmenides. From Schol. Ven. ad Aristoph. *Nub.* 96 sqq. we learn that Hippon had been ridiculed in the *Clouds*, so that he must have lived in the age of Pericles, and that Cratinus attacked him for his impiety (Schol. Clem. *Protrept.* I. 422, 23 sq. Dindl., IV. 103 Klotz), and the epithet ἄθεος seems to have stuck to him (Philop. *ad hunc loc.* 88, 23, Simpl. *in Phys.* 23, 22, Clem. Alex. *Protrept.* 24, p. 20 P., Ioann. Diac., *Alleg. in Hes. Theog.* 116). In *Metaph.* 984 a 3 A. passes him over scornfully with a sneer at the tenuity of his intellect. A better summary is furnished by Hippolytus, *Refut. haeres.* I. 16 [*Doxogr. Gr.* 566] Ἰ. δὲ ὁ Ῥηγίνος ἀρχὰς ἔφη ψυχρὸν τὸ ὕδωρ καὶ θερμὸν τὸ πῦρ. γενόμενον δὲ τὸ πῦρ ὑπὸ ὕδατος κατανικῆσαι τὴν τοῦ γεννήσαντος δύναμιν συστήσαι τε τὸν κόσμον, τὴν δὲ ψυχὴν ἐγκέφαλον λέγει, ποτὲ δὲ ὕδωρ· καὶ γὰρ τὸ σπέρμα εἶναι, <κατὰ> τὸ φαινόμενον ἡμῖν, ἐξ ὑγροῦ, ἐξ οὗ φησὶ ψυχὴν γίνεσθαι. Croton is

more likely to have been his birthplace than either Rhegium or Metapontum (Censorinus). According to Aristoxenus apud Censorinum, *De die natali*, c. 5, and Iamblichus *V. Pyth.* 267, it was Samos.

b 3. *πεισθῆναι δ' εἰκόασιν ἐκ τῆς γονῆς*. A. makes much the same remark about Thales, *Metaph.* 983 b 26.

b 4. *τοὺς αἷμα φάσκοντας τὴν ψυχὴν*. Doubtless with special reference to Empedocles, *frag.* 105 D, 317 K *αἷμα γὰρ ἀνθρώποις περικάρδιόν ἐστι νόημα*. Hippon's polemic against Empedocles recalls Diogenes of Apollonia's correction of Anaxagoras, *frag.* 5 D.

b 5. *ταύτην*, sc. *τὴν γονὴν*.

b 6. *Κριτίας*, the famous Athenian oligarch, leader of the Thirty. There seems no reason to question his identity, in spite of the opposite opinion cited as Alexander's by Philop. 89, 8 *Κριτίαν εἶπε τὸν ἓνα τῶν τριάκοντα*, ὃς καὶ *Σωκράτους ἠκροάσατο*, ἢ καὶ ἄλλον τινὰ λέγει, οὐδὲν διαφερόμεθα. *φασὶ δὲ καὶ ἄλλον Κριτίαν γεγονέναι σοφιστὴν*, οὗ καὶ τὰ φερόμενα συγγράμματα εἶναι, ὥς Ἀλέξανδρος λέγει· τὸν γὰρ τῶν τριάκοντα μηδὲ γεγραφέναι ἄλλο τι πλὴν Πολιτείας ἐμμέτρους. Philoponus in the introduction to his commentary had previously referred to Critias as follows: 9, 3 *καθόλου δὲ τὴν ψυχὴν οἱ μὲν φασιν ἀσώματον εἶναι, οἱ δὲ σῶμα· καὶ τῶν σῶμα οἱ μὲν ἀπλοῦν, οἱ δὲ σύνθετον· καὶ τῶν σύνθετον οἱ μὲν ἐκ συνημμένων σωμάτων, οἱ δὲ ἀσυνάπτων....* 9, 19 *οἱ δὲ ἐκ συνημμένων, ὥς Κριτίας, ὁ εἰς τῶν τριάκοντα· αἷμα γὰρ ἔλεγεν εἶναι τὴν ψυχὴν, "αἷμα γάρ," φησιν, "ἀνθρώποις περικάρδιόν ἐστι νόημα."* The blunder in the citation of this verse of Empedocles as if Critias were the author is attributed to Philoponus himself by Diels, *Doxogr. Gr.* 214.

b 7. *τοῦτο δ'*, int. *τὸ αἰσθάνεσθαι*. *ὑπάρχειν*, int. *τῇ ψυχῇ*. *διὰ τὴν τοῦ αἵματος φύσιν*. See on 405 a 14 *ὡς μὲν φύσει*. Here *φύσις* is virtually *οὐσία*. The parts without blood, e.g. bones and hair, are destitute of sensation, as Aristotle points out 410 a 30 sqq.

b 8. *πάντα γὰρ...πλὴν τῆς γῆς* "have secured the vote of at least one adjudicator." The metaphor, of which A. is fond (cf. *Metaph.* 989 a 6 sqq., *Pol.* 1337 a 42), comes from the method of awarding the prize in dramatic contests. Similarly in *Metaph.* loc. cit. A. remarks that fire, water and air have each been selected by one philosopher or another as the material principle of things: *τῶν δὲ τριῶν ἕκαστον στοιχείων εἵληφε κριτὴν τινα· οἱ μὲν γὰρ [sc. τῶν ἐν λεγόντων] πῦρ, οἱ δ' ὕδωρ, οἱ δ' ἀέρα τοῦτ' εἶναι φασιν. καίτοι διὰ τί ποτ' οὐ καὶ τὴν γῆν λέγουσιν, ὥσπερ οἱ πολλοὶ τῶν ἀνθρώπων;*

b 9. *ταύτην*, int. *τὴν γῆν*. *πλὴν εἰ τις αὐτὴν...10 ἢ πάντα*. *αὐτὴν* i.e. *τὴν ψυχὴν*. Empedocles includes earth amongst the four elements of soul (404 b 13). For the difference between *ἐκ πάντων εἶναι τῶν στοιχείων* and *πάντα (εἶναι τὰ στοιχεῖα)* cf. 404 b 12 *εἶναι δὲ καὶ ἕκαστον ψυχὴν τοῦτων* and Torstrick's remark cited in note on 405 a 10. The same distinction seems intended by Philoponus in the classification of theories given 9, 3 sqq. (cited in note on 405 b 6), where he divides those who made the soul *σύνθετον* into *οἱ μὲν ἐκ συνημμένων σωμάτων*, e.g. Critias, and *οἱ δὲ <ἐξ> ἀσυνάπτων*, e.g. Leucippus and Democritus. Cf. Philop. 9, 16 sqq.

**405 b 11—30.** Recapitulating, we may reduce all previous views to three heads, according as motion, perception or incorporeality is taken for the characteristic of soul. Further, the agreement pointed out between the account of the soul given by the several philosophers and their theory of the universe is confirmed with modifications in detail. When the soul is defined by perception and knowledge, this agreement rests on the assumption that like is known by like (§§ 20, 21, 23). But here Anaxagoras is an exception, for his principle, intel-

ligence, is affirmed to be impossible, and to have nothing in common with the other elements of the universe (§ 22).

b 11 *ὀρίζονται δὲ...τριῶν ὡς εἰπεῖν...I2 τῷ ἀσωμάτῳ*. In spite of its position I take *ὡς εἰπεῖν* with *πάντες*. A. goes to great lengths with hyperbaton, and *πάντες* is again separated from *ὡς εἰπεῖν* by three words, 408 a 1. It would indeed be possible to take *ὡς εἰπεῖν* with *τριῶν*. So Philop. 90, 20 sqq. Cf. *σχεδὸν δύο*, 403 b 28. But A.'s fondness for constructions of the type *πάντες, οἱ μὲν...οἱ δὲ...* makes the former view more probable. In any case it comes to this, that, since no definition falls outside of the three characteristics (cf. *Metaph.* 988 a 20—23, 993 a 11—15), all are based upon one or more of them. To *ὀρίζονται* corresponds the use of *ὅρος* in 404 a 9. This triple division is repeated 409 b 19 sqq., and seems there to be finally adopted as more precise than the twofold division at the opening of the chapter 403 b 25 sqq. The present statement must be carefully compared with both the passages referred to, to avoid misconception of the meaning. In 409 b 20 we have, not *κινήσει* but *οἱ μὲν τὸ κινητικώτατον* (sc. *τὴν ψυχὴν*) *ἀπεφάναντο τῷ κινεῖν ἑαυτοῦ*, which combines both *τὸ κινεῖν* and *τῶν κινουμένων τι* of 403 b 29 sqq. Instead of *αἰσθήσει* we have in 409 b 23 (*λέγεται*) *τὸ ἐκ τῶν στοιχείων αὐτὴν εἶναι* which agrees exactly with the inference given 404 b 8 sq. *δοσοὶ δ' ἐπὶ τὸ γινώσκειν καὶ τὸ αἰσθάνεσθαι τῶν ὄντων, οὗτοι δὲ λέγουσι τὴν ψυχὴν τὰς ἀρχάς* [whether these *ἀρχαὶ* be many or only a single one]...*ὥσπερ Ἐμπεδοκλῆς μὲν ἐκ τῶν στοιχείων πάντων*. Finally, *τῷ ἀσωμάτῳ*, which at first sight would apply only to the theories of Plato and Xenocrates, who made the soul immaterial like their immaterial *ἀρχαὶ* (cf. 404 b 29—405 a 4), is proved to bear the elastic and relative meaning pointed out in the notes on 405 a 6 and 405 a 27, for in 409 b 20 sqq. the corresponding theory is thus stated, *οἱ δὲ σῶμα τὸ λεπτομερέστατον ἢ τὸ ἀσωματώτατον τῶν ἄλλων* (int. *τὴν ψυχὴν ἀπεφάναντο*). The classification is accommodated to the general theories of *τὰ ὄντα* and their *ἀρχαὶ* held by A.'s predecessors and reviewed in *Metaph.*, but even so the choice of the term *ἀσώματον* is unfortunate when we find A. there complaining that some of these theories have taken no account of *ἀσώματα* proper (e.g. *Metaph.* 988 b 24, *τῶν γὰρ σωμάτων τὰ στοιχεῖα τιθέασιν μόνον, τῶν δ' ἀσωμάτων οὐ, ὄντων καὶ ἀσωμάτων*: cf. also 989 b 29—990 a 8).

It may be asked, why *πάντες...ὡς εἰπεῖν*? Either this is one of the cautious expressions with which A. habitually guards himself when making a sweeping statement (cf. 403 b 28 *σχεδὸν δύο*): or else he may have in view the theory of *ἁρμονία*, since in one of the two forms to which he reduces it in I., c. 4 that theory cannot easily be made to square with any of his three divisions. Philop. 90, 20 comments thus: *ταῦτα ὥσπερ ἀνακεφαλαιώσιν ἐστι τῶν εἰρημένων. ὀρίζονται δὲ οἷον περιγράφουσι καὶ χαρακτηρίζουσι. πρότερον δ' εἰπὼν κινήσει καὶ αἰσθήσει γνωρίζεσθαι τὴν ψυχὴν, νῦν προσέθηκε καὶ τῷ ἀσωμάτῳ, ὡς ἐκ τῶν ἀπρηριθμημένων δοξῶν καὶ τοῦτο ἀνακύψαν καὶ εὑρεθέν. τῷ γὰρ εὐκινήτῳ καὶ ἀεικινήτῳ συνίσταται τὸ ἀσώματον. ἀσώματον δὲ οὐ τὸ κυρίως λέγει νῦν, ἀλλὰ τὸ λεπτομερέστατον*. The last remark accords better with 409 b 21 than does the paraphrase of Themistius (14, 4 H., 25, 6 Sp.), ingenious as the latter undoubtedly is: *ἐκ δὲ τῆς ιστορίας δῆλόν ἐστιν, ὅτι δύο μὲν προτίθενται περὶ τὴν ψυχὴν θεωρεῖν κίνησιν καὶ γνῶσιν, ὑποφέρονται δὲ ὥσπερ καὶ ἄκουτες ἐπὶ τρίτον ἕτερον τὸ ἀσώματον. οἱ γὰρ λεπτομερέστατον αὐτὴν τιθέμενοι καὶ διὰ τοῦτο εὐκίνητον δνευροπολεῖν εἰόκασιν ταύτην τὴν φύσιν, λέγοντες δὲ τὴν ἀσώματον*. This was evidently suggested by *Metaph.* 984 a 18 sq., 984 b 8—11, 993 a 11—24.

b 12. *τούτων δ' ἕκαστον ἀνάγεται πρὸς τὰς ἀρχάς*, i.e. we trace the connexion with the first principle or principles assumed by the thinker in question. This



connexion is most obvious in the theories which start from *αἰσθησις* and declare soul to be τὸ γνωριστικόν: 404 b 8 sqq., 404 b 30—405 a 7. But A. now proceeds to show in detail that it can also be traced in the other theories, so far at least as concerns the number and nature of the *ἀρχαί* assumed (404 b 30 *τίνες καὶ πόσαι*).

b 13. *ἢ στοιχεῖον ἢ ἐκ τῶν στοιχείων ποιοῦσι*, sc. *τὴν ψυχὴν*. The inference is presented in this twofold form in order to include Diogenes of Apollonia, Heraclitus, and Hippon, who, as we have seen, assuming a single *στοιχείον* for nature, explained cognition by making the soul consist of this *στοιχείον*. Anaxagoras (see next note and that on 405 b 19) is reckoned with this group because, as was explained 405 a 17, he assigns to his principle *Νοῦς* both functions, *τό τε γινώσκειν καὶ τὸ κινεῖν*. Empedocles and Critias, on the other hand, and, in a very different region, Plato assume a plurality of elements for the universe and derive the soul, which is a compound, from these same elements.

b 14. *λέγοντες, πλὴν ἐνός*. The exception is Anaxagoras. He must however have been influenced by Heraclitus, who is joined with him by Theophrastus *De Sensibus* § 1 (*Doxogr. Gr.* 499, 1 sqq.) *περὶ δ' αἰσθήσεως αἱ μὲν πολλαὶ καὶ καθόλου δόξαί δ' εἰσὶν· οἱ μὲν γὰρ τῷ ὁμοίῳ ποιοῦσιν, οἱ δὲ τῷ ἐναντίῳ. Παρμενίδης μὲν καὶ Ἐμπεδοκλῆς καὶ Πλάτων τῷ ὁμοίῳ, οἱ δὲ περὶ Ἀναξαγόραν καὶ Ἡράκλειτον τῷ ἐναντίῳ*. But *αἰσθησις* (and *νόησις*) regarded as *ἀλλοίωσις* is to these early *φυσιολόγοι* (cf. 427 a 26, 416 b 33 sq.) merely a particular case of activity and passivity in general, the corporeal *αἰσθητὸν* acting upon the equally corporeal *αἰσθανόμενον* or *αἰσθητικόν* which in turn *πάσχει ὑπὸ τοῦ ποιητικοῦ*. Accordingly in his fuller discussion of *αἰσθησις* (417 a 1) A. refers us to *De Gen. et Corr.* I. 7, 323 b 1 sqq. (see the citation in note on 410 a 23) where we find a similar conflict of opinion on the general question. A. concludes that two bodies capable of mutual interaction must be *ἐναντία* in his sense of the term, i.e. members of the same genus, but belonging to different species of it, so that something may be said for each of the two conflicting views. Cf. *De A.* 416 b 6—9. In the special application to perception and cognition Anaxagoras consistently adhered to the first of the two views set forth in *De Gen. et Corr.* I. 7, Theophr. *De Sensibus* § 27 *Ἀναξαγόρας δὲ γίνεσθαι [int. τὴν αἴσθησιν] τοῖς ἐναντίοις· τὸ γὰρ ὁμοῖον ἀπαθὲς ὑπὸ τοῦ ὁμοίου*. The inconsistency of those who, like Empedocles, supported this view as a physical doctrine, but deserted it when they treated of sensation and cognition, is urged 410 a 23 sqq. If Anaxagoras was the only exception, it would seem that A. did not share the doubt of Theophrastus about Democritus, *De Sens.* § 49: cf. the admission of Theophr. § 50 *τὰ γὰρ ὁμόφυλα ἕκαστον γνωρίζειν*. In fact, since to the Atomists all sensory processes were physical processes and all the senses modes of touching or physical contact (*De Sensu* 4, 442 a 29), and since, further, all matter was homogeneous, there is no room to doubt that Democritus carried out the principle "like is known by like" more consistently than any other of the earlier physicists.

b 15. *φασὶ γὰρ...τῷ ὁμοίῳ*. The explicit statement can hardly be substantiated beyond Empedocles as cited above 404 b 13—15. A. and Theophrastus are however right in declaring that some such assumption was made by most of the natural philosophers who attempted an explanation of cognition starting usually with sense-perception. Theophrastus confesses that it was originally not so much a philosophic principle as a maxim or saw derived from observation and experience, much like the proverbs: "Birds of a feather," "noscitur a sociis," *ὥς αἰεὶ τὸν ὁμοῖον ἄγει θεὸς εἰς τὸν ὁμοῖον*. Cf. *De Sensibus* loc. cit.

(*Doxogr. Gr.* 499, 4) τὸ δε πιθανὸν ἔλαβον οἱ μὲν ὅτι τῶν ἄλλων τε τὰ πλεῖστα τῇ ὁμοιότητι θεωρεῖται καὶ ὅτι σύμφυτόν ἐστι πᾶσι τοῖς ζῴοις τὰ συγγενῇ γνωρίζειν, ἔτι δ' ὥς τὸ μὲν αἰσθάνεσθαι τῇ ἀπορροῇ γίνεται, τὸ δ' ὁμοιον φέρεται πρὸς τὸ ὅμοιον. The last sentence alludes especially to the theories of sensation put forward, amongst others, by Empedocles and Democritus, who supposed particles emanating (*ἀπορροαί*) from the object perceived, or as Democritus called them *δεῖκελα* (= *εἰδῶλα*), films, to be brought into contact directly or indirectly with the sense-organ (418 b 15, 422 a 15). For A.'s criticism of the maxim as presented by Empedocles, see 410 a 27 sqq., also 427 a 26—b 6, 416 a 29 sqq. One consequence of such a theory is that all the senses become modes of touching. See *De Sensu* 442 a 29 sqq.

b 15 ἐπειδὴ γὰρ...19 ποιοῦσιν. A summary recapitulation which helps to explain 404 b 8—11, 405 a 2—4. When A. has interpreted in his own fashion the theories before him, supplying *de suo* the grounds for some of the conclusions reached, he combines them under this general formula. Cf. Them. 14, 25 H., 26, 8 Sp. τὴν μὲν οὖν παραδοθεῖσαν ἡμῖν ἱστορίαν περὶ ψυχῆς διεληλυθήμεν, τὰ μὲν οἷς λέγουσιν ἀκολουθοῦντες, τὰ δὲ οἷς εἰκὸς αὐτοὺς βούλεσθαι λέγειν.

b 16. συνιστάσιν, as in b 24. Cf. a 26 συνίστησιν, 404 b 17 ποιεῖ.

b 19 Ἀναξαγόρας δὲ...21 ἔχειν. We return now to 405 b 14 πλὴν ἐνός. The passages from the fragments of Anaxagoras cited in notes on 405 a 16 sq. sufficiently explain why νοῦς is there said to be ἀπλοῦς, ἀμυγής, καθαρὸς and here κοινὸν οὐθὲν οὐθενὶ τῶν ἄλλων ἔχειν (repeated 429 b 23 sq.). With regard to ἀπαθῆ the case is different: the presumption of a verbal citation in 429 b 23 raised by ὥσπερ φησὶν Ἀναξαγόρας need not extend beyond the words immediately preceding καὶ μηθενὶ μηθὲν ἔχει κοινόν. It seems best therefore to regard ἀπαθῆ as A.'s own inference. The extant words which most nearly approach this idea are *frag.* 12 D. ἀλλὰ μόνος αὐτὸς ἐφ' ἑαυτοῦ ἐστίν. εἰ μὴ γὰρ ἐφ' ἑαυτοῦ ἦν, ἀλλὰ τεφ' ἐμέμεικτο ἄλλῳ...ἂν ἐκώλυεν αὐτὸν τὰ συμμεμειγμένα, ὥστε μηδενὸς χρήματος κρατεῖν ὁμοίως ὥς καὶ μόνον ἐόντα ἐφ' ἑαυτοῦ, but these words hardly go beyond the meaning of ἀμυγής. A. however had convinced himself that Anaxagoras regarded νοῦς as ἀπαθῆς, see *Phys.* VIII. 5, 256 b 20 ἐπεὶ δ' ὁρῶμεν τὸ ἔσχατον, ὃ κινεῖσθαι μὲν δύναται, κινήσεως δ' ἀρχὴν οὐκ ἔχει, καὶ ὃ κινεῖ μὲν, ὑπ' ἄλλον δὲ <κινεῖται>, ἀλλ' οὐχ ὑφ' αὐτοῦ, εὐλογον, ἵνα μὴ ἀναγκαῖον εἰπώμεν, καὶ τὸ τρίτον εἶναι ὃ κινεῖ ἀκίνητον ὄν. διὸ καὶ Ἀναξαγόρας ὁρθῶς λέγει, τὸν νοῦν ἀπαθῆ φάσκων καὶ ἀμυγῇ εἶναι, ἐπειδὴ περ κινήσεως ἀρχὴν αὐτὸν ποιεῖ εἶναι· οὕτω γὰρ ἂν μόνως κινεῖται ἀκίνητος ὦν καὶ κρατοῖται ἀμυγῆς ὦν.

The meaning of ἀπαθῆς in A. is fairly uniform = ὃ μὴ οἷός τε πάσχειν, incapable of suffering, that cannot be acted upon or affected. The Anaxagorean νοῦς is so unlike all other things that it cannot be affected by them, so 408 b 25, 410 a 23, 29, 416 a 32. The definition need not be pressed, cf. *Metaφh.* 1019 a 30 ἀπαθῆ δὲ τῶν τοιούτων ἂν μόγῃς καὶ ἡρέμα πάσχει διὰ δύναμιν καὶ τὸ δύνασθαι καὶ τὸ ἔχειν πῶς. In *Poetic.* 14, 1453 b 39 ἀπαθὲς seems to mean μὴ ἔχον πάθος. When he regarded mind as having nothing in common with the other things in the universe which are all material, Anaxagoras was on his way to declaring it immaterial, and as we shall see in the sequel (e.g. 408 b 29, 430 a 18) A. uses ἀπαθῆς combined with other adjectives like θείος and χωριστός to express immateriality.

b 21. τοιοῦτος δ' ὦν...22 συμφανὲς ἐστίν. Cf. 429 b 22 sqq. where the same difficulty recurs in regard to A.'s own theory.

b 23. ὅσοι δ' ἐναντιώσεις ποιοῦσιν. For ἐναντιώσεις ποιοῦσιν Them. substitutes τιθέασιν ἐναντίωσιν. Here A. distinguishes between philosophers who introduced contrariety in their first principles, e.g. Empedocles (cf. 411 a 3)

and those (b 24) who took for their single principle an element which has a contrary, e.g. Heraclitus or Hippon. An attentive perusal of *Phys.* I., c. 5 will show that in his view the distinction is not fundamental. In the explanation of nature and becoming, he maintains, the upholders of a single principle have recourse to contrarieties of some sort (θερμὸν καὶ ψυχρόν, μανὸν καὶ πυκνόν, στερεόν καὶ κενόν). Thus he reaches the conclusion 188 a 26 ὅτι μὲν οὖν τὰναντία πως πάντες ποιοῦσι τὰς ἀρχάς. Cf. *Metaph.* 1075 a 28 sq., 1087 a 29 sqq. and 1004 b 29 τὰ δ' ὄντα καὶ τὴν οὐσίαν ὁμολογοῦσιν ἐξ ἐναντίων σχεδὸν ἅπαντες συγκεῖσθαι· πάντες γοῦν τὰς ἀρχάς ἐναντίας λέγουσιν· οἱ μὲν γὰρ περιπτόν καὶ ἄρτιον [some Pythagoreans], οἱ δὲ θερμὸν καὶ ψυχρόν [Parmenides in τὰ πρὸς δόξαν], οἱ δὲ πέρασ καὶ ἄπειρον [the Pythagoreans], οἱ δὲ φιλίαν καὶ νεῖκος [Empedocles]. Cf. further *Metaph.* 1005 a 3 sq., 1061 a 10—15, *Phys.* I. 6, 189 a 13, b 26. In A.'s own system (*Ind. Ar.* 248 a 27) αἱ ἐναντιώσεις tamquam δεύτερον ponuntur inter τὴν ὕλην et τὰ στοιχεῖα, *De Gen. et Corr.* II. 1, 329 a 34, 26, 329 b 18, *De Sensu* 4, 442 b 18 τὰ αἰσθητὰ πάντα ἔχει ἐναντίωσιν. According to A. the *tertium quid*, matter, solves the difficulty noticed *Metaph.* 1075 a 29: πῶς ἐκ τῶν ἐναντίων ἔσται [how from contraries as principles existing things can be derived] οὐ λέγουσιν· ἀπαθὴ γὰρ τὰ ἐναντία ὑπ' ἀλλήλων. ἡμῖν δὲ λύεται τοῦτο εὐλόγως τῷ τρίτον τι εἶναι.

b 24. τὴν ψυχὴν ἐκ τῶν ἐναντίων συνιστάσιν. Philop. (91. 33) gives Empedocles as an instance, his four elements and two moving principles being contraries. Upon A.'s own physical theory the true contraries are the qualities of heat and cold, dryness and moisture, which belong to Empedocles' four elements *De Gen. et Corr.* II. 1, 329 a 31 sqq. If the remark applies also to Plato, ἐναντία must be understood in his case as loosely used for ἀντικείμενα.

b 24. οἱ δὲ θάτερον...26 τιθέασιν. Philop. 92, 2 sqq. cites Heraclitus for θερμὸν and Hippon for ψυχρόν. Diogenes of Apollonia probably regarded air as ξηρόν, see Theophrast. *De Sensibus* § 44, where he attributes τὸ φρονεῖν to the dryness of the air inhaled.

b 26. διὰ καὶ τοῖς ὀνόμασιν ἀκολουθοῦσιν. *Ind. Ar.* 26 a 18 ἀκολουθεῖν τῷ λόγῳ, τῷ νόμῳ, ταῖς δόξαις, ταῖς ὁμοίωσιν, τοῖς φαινομένοις, *Pol.* 1295 b 8, 1298 a 38, 1273 a 40, *Eth. Nic.* 1137 b 2, 1139 b 19, *Metaph.* 986 b 31, 990 b 21. Similarly we should expect ὀνόμασιν ἀκολουθοῦσιν to mean "follow the lead of names," "are guided by etymologies." But this would not suit the context. Philop., who (92, 3 sqq., cf. 2, 3) attributes these etymologies to Heraclitus and Hippon respectively, says quite correctly ἐκάτερος οὖν τούτων, φησί, καὶ ἐτυμολογεῖν ἐπιχειρεῖ τὸ τῆς ψυχῆς ὄνομα πρὸς τὴν οἰκίαν δόξαν, i.e. Heraclitus derived ζῆν from ζεῖν while Hippon derived ψυχὴ from ψυχρόν (ὁ δὲ ψυχὴν κεκλήσθαι ἐκ τοῦ ψυχροῦ λέγων). They were not guided by etymology when in search of a first principle, but having adopted their first principle, they found an etymology which would support it. The underlying assumption is of course that the name, when its correct derivation is known, unfolds the true nature of the thing. The *Cratylus* of Plato furnishes many similar examples. Cf. 436 A εἴ τις ζητῶν τὰ πράγματα ἀκολουθοῖ τοῖς ὀνόμασι, σκοπῶν οἷον ἕκαστον βούλεται εἶναι. Thus what A. means is that they etymologise to suit their respective theories, πρὸς τὴν οἰκίαν δόξαν, as Philop. says.

b 27 οἱ μὲν γὰρ...28 τὸ ζῆν ὀνόμασται. With λέγοντες supply τὴν ψυχὴν εἶναι and from the participle understand λέγουσιν before ὅτι διὰ τοῦτο=διὰ τὸ θερμὸν or διὰ τὸ εἶναι τὸ θερμὸν τὴν ψυχὴν. It would be possible to repeat τοῖς ὀνόμασιν ἀκολουθοῦσιν but it would be impossible to connect τοῖς ὄν. ἀκ. with the accusative and infinitive clause following οἱ δὲ.

b 28. οἱ δὲ τὸ ψυχρόν, int. λέγουσιν or φασιν. There is no need precisely

to assimilate the construction of this clause to the foregoing. See critical notes. The whole and part construction with the omission of γάρ would be tempting, if it did not require us to translate b 27 *ὅτι* "because." But in that case the etymology would determine the theory and not, as I consider, be adduced in support of it.

b 28. διὰ τὴν ἀναπνοὴν καὶ τὴν κατάψυξιν. The cold air inhaled as breath was supposed to cool the blood, *De Resp.* 8, 474 b 19. This derivation of ψυχή is given by Plato *Crat.* 399 D sqq. οἶμαί τι τοιοῦτον νοεῖν τοὺς τὴν ψυχὴν ὀνομάσαντας, ὥς τοῦτο ἄρα, ὅταν παρῇ τῷ σώματι, αἰτιὸν ἔστι τοῦ ζῆν αὐτῷ, τὴν τοῦ ἀναπνεῖν δύναμιν παρέχον καὶ ἀναψύχον, ἅμα δὲ ἐκλείποντος τοῦ ἀναψύχοντος τὸ σῶμα ἀπόλλυται τε καὶ τελευτᾷ. ὅθεν δὴ μοι δοκοῦσιν αὐτὸ ψυχὴν καλέσαι. As an alternative to this obvious derivation, the Platonic Socrates offers a "more scientific" derivation, connecting ψυχή with φύσιν ἔχειν. In Aristoph. *Nub.* 627 Socrates uses the oath μὰ τὴν ἀναπνοήν, implying that respiration is so essential to life as to be justly deified.

### CHAPTER III.

This chapter begins with a criticism of soul as a thing in motion or capable of motion. With the early philosophers, as we have seen in the last chapter, this conception of soul is a necessary inference from the belief that soul is the cause of animal motion (403 b 28—31). A., too, shares the current belief that soul is κινητικόν or τὸ κινεῖν, but he disproves in a series of nine arguments the necessity of the inference that it must be τῶν κινουμένων τι. There follows a critical examination of the theory of soul laid down in the *Timaeus*, §§ 11—21 (406 b 26—407 b 11). The chapter closes with some suggestive remarks on the futility of defining soul without taking account of the body to which it belongs (§§ 22, 23, 407 b 12—26).

**405 b 31—406 a 4.** Our first subject of enquiry is motion. The definition of the soul as that which moves itself, or that which is capable of self-motion, is false. It has been already stated that the moving cause is not necessarily itself in motion. Against the proposition that soul is moved the following objections may be urged (which equally apply to the definition of soul as that which moves, or is capable of moving, itself).

**406 a 4—12.** When anything is said to be in motion this means *either* that the thing moved has a derivative and adventitious motion, *or* that it has an independent motion in and by itself. [The ship moves in the latter way in and by itself, the passengers conveyed by it in the former, through being in something which is itself in motion, as appears from the fact that they do not, in the case supposed, employ their own proper mode of progression with their feet.] In accordance with this distinction we proceed to enquire whether the soul has an independent motion in and by itself.

**406 a 12—16.** (1) Understanding κινούμενον to mean καθ' αὐτὸ κινούμενον, and assuming the four species of motion to be qualitative change (ἀλλοίωσις), growth (αὔξισις), decay (φθίσις), spatial motion (φορά), we affirm that, if the soul is moved καθ' αὐτό, it is moved naturally, φύσει, and if it is moved with any of these species of motion the soul must be in space, ἐν τόπῳ.

**406 a 16—22.** (2) Further, on the same presuppositions, if it is the nature of soul to move itself, there will be a locality in the universe towards which as a φύσει κινούμενον it tends to move [but there is none such].

**406 a 22—27.** (3) If the soul is moved naturally, it is also moved by constraint, but of such constrained motions it is impossible to form any idea.

**406 a 27—30.** (4) According to the doctrine of *De Caelo*, that the nature of which is to be moved upwards is fire, as earth is that the nature of which is to be moved downwards. Consequently the soul must be either fire or earth, according as one or other of these rectilinear motions is attributed to it as its essential nature.

**406 a 30—b 5.** (5) It is a fact that soul sets body in motion, and it may be reasonably supposed that the motions produced in the body are those to which the soul is itself subject. Hence, *converiendo*, the motion of the soul must be that of the body, viz. spatial motion (*φωρά*), whether the soul moves as a whole or by successive movements of its parts, the whole remaining at rest. If so, it would be possible for the soul to leave the body and return to it, and the resurrection of the dead would cease to be impossible.

**406 b 5—11.** (6) It may be maintained that the soul is moved indirectly or *per accidens*. [A.'s own opinion, see 408 a 30—34.] In that case such motions might be imparted to it by external agency. But if this be admitted by our opponents, it is inconsistent for them to maintain that something (1) has self-motion in its essence, and (2) is at the same time moved by external agency, unless the concurrence of the impulses from within and from without is merely accidental. The soul however, if it is moved at all, is moved by objects of sense.

**406 b 11—15.** (7) The self-motion of soul implies not only that it causes motion *quâ* soul and in respect of its essential nature, but also that it is subject to motion *quâ* soul. Now everything subject to motion or change in whatever respect undergoes a transition or transformation from one condition to another in that respect. If then the soul is moved *quâ* soul, it is always passing out of that condition in which its essential nature consists [in other words, in such movement it quits one condition for another—it is dislodged from the condition of its existence—and loses its essential nature].

**406 b 15—25.** (8) If it be maintained with Democritus that the soul is subject to exactly the same motions which it communicates to the body, we shall enquire if the soul's remaining at rest is due to the same causes, a result which seems inexplicable. (9) And, generally, the facts show that it is not in this way that the soul moves the body, but through a species of purpose and thought.

As to the method which is followed in the above objections, Bonitz well observes, *Hermes* VII. p. 421, "Gemeinsamer Charakter der einzelnen zur Widerlegung dieser Definition angewendeten Beweise ist, dass Aristoteles seine eignen Lehren über das Wesen, insbesondere über die Arten, der Bewegung als sichere Grundlage voraussetzt und durch Anwendung derselben auf die fragliche Definition zu Consequenzen führt, welche entweder an sich unhaltbar sind oder doch der Absicht derer selbst widerstreiten, welche jene Definition aufgestellt haben." The same method is pursued throughout cc. 3—5 : A. deduces absurd and inconsistent conclusions by combining the doctrines of his own system with the propositions which he undertakes to refute. He does not stop to enquire whether those who maintain these propositions would have accepted the doctrines of his own system. In the present case, there is the further difficulty that the mobility of the soul which he is combating is regarded as one and the same tenet when advanced by two opposite schools, viz. by the Pre-Socratics, of whom Democritus is the type, who considered soul to be something corporeal, and by the Platonists,

who as emphatically declared it to be incorporeal. The cogency of the objections will naturally vary according as they are advanced against the one or the other. No doubt he tries to follow the rule which he lays down *De Caelo* II. 13, 294 b 10 δεῖ τὸν μέλλοντα καλῶς ζητήσῃ ἐνστατικὸν εἶναι διὰ τῶν οικείων ἐνστάσεων τῷ γένει. The supply of objections is inexhaustible: but their relevancy to the subject is just what his opponents would dispute. In c. 4 he deals with harmony exactly as here he deals with motion.

405 b 31 ὥς γὰρ... 406 a 2 κίνησιν. Two propositions are here repudiated as untrue and even impossible. The first is the proposition that soul is that which moves itself, as defined by Plato in the *Λαῖως* (see note on 404 a 21). The second is the more general proposition that motion in any sense is an essential attribute of soul. In other words, it is false to say that soul moves itself, and further it is false to say that soul is moved at all. The term motion is used throughout in a wider sense than in the present day, viz. to express several varieties of change. To render it more precise A. often affixes μεταβολή (just as Plato does, e.g. *Λαῖως* 894 A, C, E and 895 A, etc., v. Stallb. ad 893 C, p. 161, 894 C, p. 165), κίνησις καὶ μεταβολή, motion, that is to say, change, *Phys.* IV. 10, 218 b 19 μηδὲν διαφερέτω λέγειν ἡμῖν ἐν τῷ παρόντι κίνησιν ἢ μεταβολήν. Sometimes, however, κίνησις is made a species of μεταβολή: cf. *Phys.* V. 5, 229 a 31, b 13 sq. As we shall see below (406 a 12) motion includes not only (α) φορά, spatial motion, change of place, locomotion, κατὰ τόπον, the meaning which we now attach to the term motion, but also (β) αὔξῃσις, growth and φθίσις, decay, two forms of quantitative change, κατὰ τὸ ποσόν, and (γ) ἀλλοίωσις, qualitative change, the internal alteration or transformation which the thing changed undergoes when, though it remains in being, it is modified in respect of its condition or character, κατὰ τὸ ποῖον. These are the three species of motion finally recognised by A. in the *Physics*, where he employs the word as a scientific term and determines its connotation. Though his language varies, he must be taken to exclude from κίνησις proper the sense of γένεσις καὶ φθορά, generation and destruction. See note on 406 a 12. For A.'s attempt to reduce the other species to φορά, spatial motion, see note on a 16 *inf.* Finally what A. means by motion (κίνησις) must be carefully distinguished in another direction from what he means by ἐνέργεια, active operation or actualisation. On this important question there will be more to say later, e.g. 417 a 15–17, 425 b 26–426 a 8, 431 a 1–7.

406 a 1. ἡ δυνάμενον κινεῖν, int. ἑαυτό. Them. 14, 29 H., 26, 14 Sp. ὥς καὶ τὸν ὄρον αὐτῆς τοιοῦτον ἀποδιδύναι, ψυχὴν εἶναι τὸ κινεῖν ἑαυτὸ ἢ δυνάμενον κινεῖν ἑαυτό· οὕτω γὰρ καὶ Πλάτων ἐν τῷ δεκάτῳ τῶν Νόμων (viz. 896 A). The exact words are τὴν δυνάμενην αὐτὴν αὐτὴν κινεῖν κίνησιν (see the context cited in note on 404 a 21).

a 3. πρότερον. Philop. and Them. refer us to the *Physics*, where, in VIII. 5, 256 b 23 sq., it is argued that not everything which causes motion is necessarily itself moving: and in the last resort we must postulate a prime movent (πρῶτον κινεῖν) itself unmoved. Cf. *Metaph.* 1072 a 25, *Phys.* VIII. 5, 258 b 7 ἀμφοτέρως συμβαίνει τὸ πρῶτως κινεῖν ἐν ἅπασιν εἶναι τοῖς κινουμένοις ἀκίνητον. ἐπεὶ δὲ δεῖ κίνησιν αἰεὶ εἶναι καὶ μὴ διαλείπειν, ἀνάγκη εἶναι τι αἰδῖον δὲ πρῶτον κινεῖν, εἴτε ἐν εἴτε πλείω, καὶ τὸ πρῶτον κινεῖν ἀκίνητον. Bonitz, however, declines to accept this reference. Cf. *Ind. Ar.* 99 a 1 *Phys.* VIII. 5; quod Trdlbg *de an.* I. 2. 403 b 29 respici putat, probari non potest. Them. (14, 33–15, 17 H., 26, 20–27, 21 Sp.) gives a good abstract of the argument in the *Physics*.

a 4. διχῶς. The distinction is between independent and derivative motion, i.e. change, generally: not primarily, as the illustration might suggest, between direct and indirect locomotion (e.g. the free motion of the ship and

the motion, by conveyance, of the passenger). It is a metaphysical or logical (cf. a 10, λεγομένου) not a physical distinction. The principle on which it depends can be best understood if we go back to the fundamental antithesis between the logical subject and its accidents or attributes. Change or motion is predicated of the various substances or things, regarded as particulars. Each of these is a distinct something or whole, τόδε τι or ὅλον, and the motion predicated of it belongs to it as such, τῷ εἶναι αὐτὸ ὃ ἐστι καθ' αὐτό, because it is what it is, independently of all other existing things. Thus καθ' αὐτό is explained by κατὰ τὴν οὐσίαν. But besides the wholes which thus exist and are moved independently, we must take account of parts and accidents, the existence of which is conditioned by that of the things to which as parts and accidents they belong. Of such parts and accidents motion can also be predicated, but their motion, like their existence, will not be independent and unconditioned, but dependent, derivative and conditioned. In the *Physics* this distinction is usually expressed by κατὰ συμβεβηκός κινούμενον as opposed to καθ' αὐτό κινούμενον, where κατὰ συμβ. conveys the idea of accessory, concomitant or adventitious. By a vague or extended use of the phrase τὰ κατὰ συμβ. κινούμενα are sometimes made to include parts of a whole as well as accidents, both parts and accidents being regarded as accessories or concomitants. See e.g. *Phys.* VIII. 4, 254 b 7—12, as contrasted with the more precise distinctions of *Phys.* V. 1, 224 a 21—34, and compare *Simpl. in Phys.* 1207, 15 τὰ γὰρ ὑπάρχοντα τοῖς καθ' αὐτὸ κινούσιν ἢ κινούμενοις ἢ ὡς μέρη ἢ ὡς πάθη ἢ ὡς ἔξεις ἢ ὡς ὄργανα ἢ ἄλλως ὁπωσοῦν, ταῦτα λέγεται κατὰ συμβεβηκός κινεῖν ἢ κινεῖσθαι: and *Simpl. in Phys.* 554, 23 κυριωτάτη γὰρ ἀντίθεσις τοῦ καθ' αὐτὸ πρὸς τὸ καθ' ἕτερον οἷον τὸ κατὰ μέρος, ὡς νῦν [*Phys.* 210 a 27], ἢ τι ἔξωθεν, ὅτε τὸ κυρίως κατὰ συμβεβηκός ποιεῖ. "Other" may be interpreted to mean a part of the first thing, part being distinct from whole, or a second thing wholly distinct from the first. Language, we must remember, is apt to designate the whole of a thing from its parts (*Phys.* IV. 3, 211 b 1). The choice of καθ' ἕτερον instead of κατὰ συμβεβηκός enables A. to include the case of the passenger, who is, strictly speaking, neither a part nor an accident of the ship which conveys him, though, *quā* moved, he may be regarded for the time being as one or the other, since his motion in the case supposed is as much conditioned by that of the ship as if he were the ship's mast or its tonnage. Cf. *Simpl. in Phys.* 802, 17 διορίζει πρῶτον τὰς τῆς μεταβολῆς διαφοράς, τὴν μὲν κατὰ συμβεβηκός λέγων.....ὅταν τὸν ἐν τῇ νηὶ ἡρεμοῦντα πλωτῆρα λέγωμεν κινεῖσθαι, ὅτι ἡ ναῦς, ἢ τρόπον τινὰ συμβεβηκεν ὁ πλωτῆρ, καθ' αὐτὴν κινεῖται καὶ μεταβάλλει. Strictly speaking, the ship and its contents, and most probably the man on horseback, are artificial systems, each with its own κινεῖν and κινούμενον, just as the ζῷον is a similar natural system. See *Phys.* VIII. 4, 254 b 12—17, 27—33. The latter passage ends thus: ἔοικε γὰρ ὥσπερ ἐν τοῖς πλοίοις καὶ τοῖς μὴ φύσει συνισταμένοις, οὕτω καὶ ἐν τοῖς ζῷοις εἶναι διηρημένον τὸ κινεῖν καὶ τὸ κινούμενον, καὶ οὕτω τὸ ἅπαν αὐτὸ αὐτὸ κινεῖν.

a 4 καθ' ἕτερον...5 καθ' αὐτό, *per aliud...per se*, indirectly...directly. These phrases, like κατὰ συμβεβηκός...καθ' αὐτό (*per accidens...per se*) in the *Physics*, express the manner: they answer the question "How is the thing moved?" English has no preposition to express κατὰ in this connexion as distinct from ὑπὸ c. gen. (Latin *ab*), but "in respect of," "in virtue of" come near to it. The attribute whiteness (a 18) is moved in virtue or in respect of its concomitance with the body of which it is an attribute. We may note parenthetically the bilateral use of κατὰ: *Phys.* V. 1, 224 a 23 τὸ δὲ τῷ τούτου τι μεταβάλλειν ἀπλῶς λέγεται μεταβάλλειν, οἷον ὅσα λέγεται κατὰ μέρη [*int. μεταβάλλειν*]: ὑγιάζεται γὰρ τὸ

σῶμα, ὅτι ὁ ὀφθαλμὸς ἢ ὁ θώραξ, ταῦτα δὲ μέρη τοῦ ὅλου σώματος. Here, be it observed, the whole is "moved" (e.g. healed) in respect or in virtue of a part. Cf. *Phys.* VIII. 4, 254 b 7—12. Thus, then, κατὰ expresses the logical relation of dependence in the order of thought. We can think of the motion of a ship without implying motion of a passenger: we cannot think of the motion of the passenger from port to port without implying that of the ship. As is pointed out by Them. (15, 21 H., 27, 27 Sp.) and by Simpl. (*in Phys.* 802, 19), the passengers may be assumed to be at rest in the ship, for in any case their walking up and down the deck is not the species of motion with which they and the ship are propelled: and it is the latter motion alone with which the argument is here concerned. If the passenger misses the vessel, walking, his own mode of progression, will not avail him in the water. If this holds when B, τὸ καθ' ἕτερον κινούμενον, is a particular thing separately existing, it holds *a fortiori* when B is a part (whether μόριον συμφυές or συνεχές) of A, τὸ καθ' αὐτὸ κινούμενον, by whose motion its own is conditioned: or again when B is an accident, whiteness or the height of three cubits (a 18) of A. For, as we saw, neither part nor accident can be thought of as existing, much less as being moved, independently of the particular thing, οὐσία or τόδε τι, in which it inheres. It would be a mistake, then, to treat κατὰ as simply equivalent to ὑπό. See *Phys.* VIII. 4, 254 b 12 τῶν δὲ καθ' αὐτὰ τὰ μὲν ὑφ' ἑαυτοῦ τὰ δ' ὑπ' ἄλλου [int. κινεῖται]. The passenger might conceivably propel the vessel by rowing, but in that case it would still be true of him οὐ καθ' αὐτὸν ἀλλὰ καθ' ἕτερον κινεῖται, viz. τῷ ἐν κινουμένῳ εἶναι.

a 5. τῷ ἐν κινουμένῳ εἶναι. The phrase ἐν τινι εἶναι has a wide meaning. It could be applied to the parts of a whole or the accidents of a logical subject, e.g. λευκόν, τρίπηχυ. Them. 15, 22 H., 28, 1 Sp. οὕτω δ' ἂν φαίης καὶ τὰ συμβεβηκότα τοῖς σώμασιν ὡς λευκότητα μελανίαν τὸ δίπηχυ καὶ τρίπηχυ κινεῖσθαι, καθ' ἕτερον δέ, τῷ ἐν κινουμένοις ὑπάρχειν· τὰ δὲ τοῦτον τὸν τρόπον κινούμενα ἐνδέχεται μήτε σώματα εἶναι μήτε προσδεῖσθαι τόπου καθ' ἑαυτά. If the reader consults *Phys.* IV. 3 with the valuable commentary of Simplicius he will not merely find a supplement to A.'s vocabulary of philosophical terms, *Metaph.* Δ., but will derive considerable assistance for the proper understanding of the antithesis between καθ' αὐτὸ and κατ' ἄλλο (ἕτερον), which often recurs, e.g. 429 b 27, where it is used to determine the meaning of νοητός.

a 8. δῆλον δ' ἐπὶ τῶν μορίων, ὅτι οὐκ ἔστι τοῦ πλωτήρος οἰκεία ἢ τοιαύτη κίνησις (motion of conveyance). If his locomotion were independent and due to himself, not accessory and derivative, the passenger would be walking, not sailing in the ship.

a 9. βάδισις, the appropriate species of locomotion, φορά, as distinct from πτήσις, ἔρψις, νεύσις, ἄλσις, which are severally appropriate to other animals: *De Part. An.* I. 1, 639 b 3, *Eth. Nic.* 1174 a 31.

a 12. καὶ μετέχει. Probably καὶ is explicative and μετέχει κινήσεως simply duplicates κινεῖται. In a 21 εἴπερ φύσει κινήσεως μετέχει seems to take up the conclusion of (a 15) φύσει ἂν ὑπάρχοι κίνησις αὐτῇ, and it is followed (in a 22) by ἔτι δ' εἰ φύσει κινεῖται, as if all three were equivalent phrases. In any case καθ' αὐτὴν must be taken with μετέχει as well as with κινεῖται. I follow Trend. in rejecting the attempt of Philop. to give a different sense to μετέχει κινήσεως: Philop. 98, 10 τὰ μὲν συνουσιωμένην ἔχει τὴν κίνησιν...ὥς τὰ οὐράνια, τὰ δὲ συνουσιωμένην μὲν αὐτὴν οὐκ ἔχει...τὴν μέντοι δύναμιν τοῦ κινεῖσθαι ἐν τῇ φύσει ἔχουσα, ὥστε δύνασθαι μετέχειν τῆς κινήσεως, ὅταν ᾗ τὸ κινεῖν, ὥς ἡ βῶλος.

a 12. τρισάφων. See note on 405 b 31 *μεφρ.* where *three* distinct species of change or motion in the wider sense are enumerated. This is the mature



view, *γένεσις* καὶ *φθορά* being excluded, as not properly *κίνησις* (*Phys.* v. 1, 225 a 26, 32): *Iud. Ar.* 391 b 36 adduces *Phys.* II. 1, 192 b 14, v. 1, 225 b 7, v. 2, 226 a 25, VII. 2, 243 a 6, VIII. 7, 260 a 27, *De Cael.* IV. 3, 310 a 23, *Metaph.* 1068 a 10, b 17. In spite of *τεσσάρων* this is virtually the doctrine of the present passage. The number "four" is made up by distinguishing "growth" (*αὔξησης*) from "waning" or "decay" (*φθίσις*): whereas these are merely the positive and negative aspects of quantitative change (*κατὰ τὸ ποσόν, κατὰ μέγεθος*), i.e. increase and diminution. The reason assigned by Simplicius and Philoponus is doubtless correct, viz. that there is no common term in Greek comprehending both *φθίσις* and *αὔξησης* and so corresponding to *ἀλλοίωσις* and *φθορά*. In *Categ.* 14, 15 a 13, the writer by adding *γένεσις* and *φθορά*, as two separate species, to the four here enumerated constructs a list of six *εἴδη κινήσεως*.

a 13. *κινοῖτ' ἄν*. This chapter affords many instances of the opt. with *ἄν* expressing the logical consequence as a 15 *ἄν ὑπάρχοι*, a 22 *κὰν κινήθῃ*, b 4 *ἐνδέχουτ' ἄν* and *ἔπouτ' ἄν*, b 12 *κινοῖτ' ἄν* and b 13 *ἐξίσταιτ' ἄν*, 407 a 21 *ἄν εἴη*, 407 b 2 *ἄν κινοῖτο*. Cf. note on 403 a 9. For the future indicative as an equivalent compare 406 a 18 *ὑπάρξει*, 407 a 10 *νοήσει*, a 14 *διέξεισιν*, and *νοήσει*.

a 14 *εἰ δὲ κινεῖται... 15 αὐτῇ*. The protasis must follow from the definition of soul impugned above (405 b 31—406 a 2). See below 406 a 16—19. If motion is not an accidental or adventitious attribute but belongs to the essence of this unknown X, the soul, the soul must be assigned to the domain of nature and not to the domain of art. Motion is found in both, but what is subject to motion is a natural object, a product of nature, only when it contains within itself the principle of motion: *Phys.* II. 1, 192 b 13 *τὰ μὲν γὰρ φύσει ὄντα πάντα φαίνεται ἔχοντα ἐν ἑαυτοῖς ἀρχὴν κινήσεως καὶ στάσεως, τὰ μὲν κατὰ τόπον, τὰ δὲ κατ' αὔξησιν καὶ φθίσιν, τὰ δὲ κατ' ἀλλοίωσιν*. Anything which does not possess within itself such a principle of motion must be assigned to the products of art or manufactured articles, e.g. *κλίνη* or *ἱμάτιον*, although the materials of which they are made are natural objects: 192 b 15 *κλίνη δὲ καὶ ἱμάτιον, καὶ εἴ τι τοιοῦτον ἄλλο γένος ἐστίν, ἥ μὲν τετύχηκε τῆς κατηγορίας ἐκάστης καὶ καθ' ὅσον ἐστὶν ἀπὸ τέχνης, οὐδεμίαν ὁρμὴν ἔχει μεταβολῆς ἔμφυτον, ἥ δὲ συμβέβηκεν αὐτοῖς εἶναι λιθίνους ἢ γηίνους ἢ μικτοὺς ἐκ τούτων, ἔχει, καὶ κατὰ τοσοῦτον, ὥς ὅσης τῆς φύσεως ἀρχῆς τινὸς καὶ αἰτίας τοῦ κινεῖσθαι καὶ ἡρεμεῖν ἐν ᾧ ὑπάρχει πῶτος καθ' αὐτὸ καὶ μὴ κατὰ συμβεβηκός*. To explain *μὴ κατὰ συμβεβηκός* A. then gives the illustration of the physician who treats himself and so is at the same time *ιατρός* and *ὑγιαζόμενος*, but it is only *κατὰ συμβεβηκός* and not *καθ' ἑαυτὸν* that *ὁ ὑγιαζόμενος* is in this instance *ιατρός*: 192 b 22 *λέγω δὲ τὸ μὴ κατὰ συμβεβηκός, ὅτι γένοιντ' ἄν αὐτὸς αὐτῷ τις αἰτίος ὑγείας ὢν ἱατρός· ἀλλ' ὁμως οὐ καθὼ ὑγιάζεται τὴν ἱατρικὴν ἔχει, ἀλλὰ συμβέβηκε τὸν αὐτὸν ἱατρὸν εἶναι καὶ ὑγιαζόμενον· διὸ καὶ χωρίζεται ποτ' ἀπ' ἀλλήλων [int. ὁ ἱατρός καὶ ὁ ὑγιαζόμενος]. ὁμοίως δὲ καὶ τῶν ἄλλων ἕκαστον τῶν ποιουμένων· οὐδὲν γὰρ αὐτῶν ἔχει τὴν ἀρχὴν ἐν ἑαυτῷ τῆς ποιήσεως, ἀλλὰ τὰ μὲν ἐν ἄλλοις καὶ ἐξωθεν, οἷον οἰκία καὶ τῶν ἄλλων τῶν χειροκμήτων ἕκαστον, τὰ δ' ἐν αὐτοῖς μὲν ἀλλ' οὐ καθ' αὐτά, ὅσα κατὰ συμβεβηκός αἰτία γένοιντ' ἄν αὐτοῖς [int. τῆς ποιήσεως]. Cf. *Phys.* VIII. 4, 254 b 14 *τό τε γὰρ αὐτὸ ὑφ' αὐτοῦ κινούμενον φύσει κινεῖται, οἷον ἕκαστον τῶν ζώων· κινεῖται γὰρ τὸ ζῶον αὐτὸ ὑφ' αὐτοῦ, ὅσων δ' ἡ ἀρχὴ ἐν αὐτοῖς τῆς κινήσεως, ταῦτα φύσει φαιμέν κινεῖσθαι*. Cf. *Pl. Laws* 895 C.*

a 15. *εἰ δὲ τοῦτο*, int. οὕτως ἔχει. Cf. a 32. *καὶ τόπος*, int. *ἄν ὑπάρχοι αὐτῇ*.

a 16. *πᾶσαι γὰρ... ἐν τόπῳ*. Otherwise expressed, two of the three species of motion (or three of the four above enumerated) imply *φθορά*, spatial motion, and therefore cannot take place except in space. For growth and decay compare *Phys.* VIII. 7, 260 b 13 *ἀλλὰ μὴν καὶ τοῦ αὐξανόμενου καὶ φθίνοντος*

μεταβάλλει κατὰ τόπον τὸ μέγεθος. *De Gen. et Corr.* I. 5, 320 a 18 τὸ δ' αὖξανόμενον καὶ τὸ φθίνον [int. φαίνεται ἐξ ἀνάγκης μεταβάλλον κατὰ τόπον], ἄλλον δὲ τρόπον τοῦ φερομένου. τὸ μὲν γὰρ φερόμενον δλον ἀλλάττει τόπον, τὸ δ' αὖξανόμενον ὥσπερ τὸ ἐλαυνόμενον· τουτοῦ γὰρ μένοντος τὰ μόρια μεταβάλλει κατὰ τόπον...τὰ δὲ τοῦ αὖξανόμενου [int. μεταβάλλει] αἰ ἐπὶ πλείω τόπον, ἐπ' ἐλάττω δὲ τὰ τοῦ φθίνοντος. Since ἀλλοίωσις implies an agent and patient, that which produces and that which suffers the alteration or transformation, and these two can only be brought together in actual contact by spatial motion, it follows that spatial motion is also necessarily implied in ἀλλοίωσις. *Phys.* VIII. 7, 260 b 1 ἀλλὰ μὴν εἴ γε ἀλλοιοῦται, δεῖ τι εἶναι τὸ ἀλλοιοῦν καὶ ποιοῦν ἐκ τοῦ δυνάμει θερμὸν τὸ [om. τὸ codd. E K] ἐνεργείᾳ θερμόν. δῆλον οὖν ὅτι τὸ κινοῦν οὐχ ὁμοίως ἔχει, ἀλλ' ὅτε μὲν ἐγγύτερον ὅτε δὲ πορρώτερον τοῦ ἀλλοιουμένου ἐστίν. ταῦτα δ' ἄνευ φορᾶς οὐκ ἐνδέχεται ὑπάρχειν, 260 b 7 ἔτι δὲ πάντων τῶν παθημάτων ἀρχὴ πύκνωσις καὶ μάνωσις... πύκνωσις δὲ καὶ μάνωσις σύγκρισις καὶ διάκρισις, καθ' ἃς γένεσις καὶ φθορὰ λέγεται τῶν οὐσιῶν. συγκρινόμενα δὲ καὶ διακρινόμενα ἀνάγκη κατὰ τόπον μεταβάλλειν, *De Gen. et Corr.* I. 6, 322 b 9 ἀλλὰ μὴν οὐδ' ἀλλοιοῦσθαι δυνατόν, οὐδὲ διακρίνεσθαι καὶ συγκρίνεσθαι, μηδὲ πάσχοντος...22 οὔτε γὰρ ποιεῖν ταῦτα καὶ πάσχειν δύναται κυρίως ἢ μὴ οἷόν τε ἄψασθαι ἀλλήλων...32 ὁμοῦ δὲ τὸ κυρίως λεγόμενον [int. ἀφή] ὑπάρχει τοῖς ἔχουσι θέσιν. θέσις δ' οἷσπερ καὶ τόπος. Thus τόπος=space: *Ind. Ar.* 767 a 26, aliquoties pro synonymo χώρα legitur, veluti *Phys.* IV. 1, 208 b 7, 209 a 8, 2, 209 b 15 etc. Properly τόπος is the portion of space which a body fills: *Phys.* IV. 4, 212 a 20 τὸ τοῦ περιέχοντος πέρασ ἀκίνητον πρῶτον: cf. 212 a 14 ἔστι δ' ὥσπερ τὸ ἀγγεῖον τόπος μεταφορητός, οὕτω καὶ ὁ τόπος ἀγγεῖον ἀμετακίνητον.

a 20. **ὃ γὰρ ὑπάρχουσιν**, int. τὸ λευκὸν καὶ τὸ τρίπηχυ. That which has the quality white or the length of three cubits may be in motion; and so incidentally the quality or quantity in question may be said to be moved. *Phys.* IV. 4, 211 a 22 ταῦτα (i.e. ἡ λευκότης καὶ ἡ ἐπιστήμη) γὰρ οὕτω μεταβέβηκε τὸν τόπον, ὅτι ἐν ᾧ ὑπάρχουσι μεταβάλλει. This, be it remarked, is precisely the way in which, on A.'s own theory, soul is moved, viz. as being practically the form of a concrete living thing (ζῶον ἔμψυχον or σύνολον) which has motion. Cf. *infr.* 408 a 30—34.

a 21. **οὐκ ἔστι τόπος αὐτῶν**. There is no place assignable for the quality white or the length three cubits, but only for the concrete things to which they respectively belong, i.e. to the existences (οὐσίαι) of which they are, in the widest sense, accidents (συμβεβηκότα). **τῆς δὲ ψυχῆς ἔσται**, int. τόπος. The argument amounts to this:—If soul is a thing to which the attribute motion essentially or of its own nature belongs, then it will be in space, and, what is more, will have a place peculiar to it, a region in the universe to which it tends. Them. 15, 34 H., 28, 18 Sp. εἰ δὴ σῶμα ἡ ψυχὴ, δῆλον ὅτι καὶ τόπον οἰκεῖον ἔξει. τίνα οὖν τοῦτον; εἰς ἐκείνον γὰρ φύσει κινήσεται καὶ γενομένη ἐν ἐκείνῳ φύσει ἡρεμήσει. Thus Them. gives τόπος a different meaning here (a 21) from that which it has above (a 16). This is plausible, for otherwise, as M. Rodier remarks, A. would elaborate a second argument to obtain a conclusion already reached almost at a step.

a 22 **ἐτι δ' εἰ...23 καὶ φύσει**. Aut scribendum est εἴ τι aut certe intelligendum. Quae enim sequuntur ostendunt haec in universum dici, non de sola anima (Torstrick). This proposition holds of the four simple bodies, fire, air, earth and water; each of which has its natural rectilinear motion, upward from the centre of the universe to its circumference, or downward from the circumference to the centre, according to its own proper region or locality (τόπος οἰκεῖος) and yet may be constrained to move in the opposite or some other

direction. Similarly its tendency to move with its natural motion may be counteracted, and it may be thus brought to a standstill. Thus fire (according to A.) is a simple body whose natural motion is upwards; but the pressure of the air, as in a strong wind, may either cause the flames to go actually downwards, or at any rate may hinder them from ascending: βία = παρὰ φύσιν. Cf. *Phys.* v. 6, 230 a 29, *De Resp.* 472 a 18. Or, as each simple body has its own proper motion, a constrained or unnatural motion = that which naturally belongs to some other body: *De Cael.* i. 2, 269 a 7 βία μὲν γὰρ ἐνδέχεται τὴν ἄλλου καὶ ἐτέρου (int. κίνησιν φέρεσθαι), κατὰ φύσιν δὲ ἀδύνατον, εἴπερ μία ἑκάστου κίνησις ἢ κατὰ φύσιν τῶν ἀπλῶν. Our first proposition is stated again *De Cael.* iii. 2, 300 a 23 ἀλλὰ μὴν εἰ παρὰ φύσιν ἐστὶ τις κίνησις, ἀνάγκη εἶναι καὶ κατὰ φύσιν, παρ' ἣν αὕτη· καὶ εἰ πολλαὶ αἱ παρὰ φύσιν, τὴν κατὰ φύσιν μίαν· κατὰ φύσιν μὲν γὰρ ἀπλῶς, παρὰ φύσιν δ' ἔχει πολλὰς ἑκάστον. The converse is stated *De Gen. et Corr.* ii. 6, 333 b 26 ἔτι δ' ἐπεὶ φαίνεται καὶ βία καὶ παρὰ φύσιν κινούμενα τὰ σώματα καὶ κατὰ φύσιν, οἷον τὸ πῦρ ἄνω μὲν οὐ βία, κάτω δὲ βία, τῷ δὲ βία τὸ κατὰ φύσιν ἐναντίον, ἔστι δὲ τὸ βία· ἔστιν ἄρα [the apodosis begins] καὶ τὸ κατὰ φύσιν κινεῖσθαι. Also *Phys.* iv. 8, 215 a 1 πρῶτον μὲν οὖν [int. λεκτέον] ὅτι πᾶσα κίνησις ἢ βία ἢ κατὰ φύσιν. ἀνάγκη δ' ἂν περὶ ἧς βίαιος, εἶναι καὶ τὴν κατὰ φύσιν· ἢ μὲν γὰρ βίαιος παρὰ φύσιν ἐστίν, ἢ δὲ παρὰ φύσιν ὑστέρα τῆς κατὰ φύσιν, *De Cael.* i. 7, 274 b 30 ἢ γὰρ κατὰ φύσιν κινήθησεται ἢ βία· καὶ εἰ βία, ἔστιν αὐτῷ καὶ ἡ κατὰ φύσιν (sc. κίνησις).

a 23 τὸν αὐτὸν δὲ τρόπον ἔχει καὶ περὶ ἡμέρας...26 βία. Similarly *De Cael.* i. 8, 276 a 22 ἅπαντα γὰρ καὶ μένει καὶ κινεῖται βία καὶ κατὰ φύσιν, καὶ κατὰ φύσιν μὲν, ἐν ᾧ μένει μὴ βία, καὶ φέρεται, καὶ εἰς ὃν φέρεται, καὶ μένει, ἐν ᾧ δὲ βία [sc. μένει], καὶ φέρεται βία, καὶ εἰς ὃν βία φέρεται, βία καὶ μένει. Cf. ii. 13, 295 a 2—7, whence it is argued that, if the earth is at rest βία, it must have been brought into its present position at the centre of the world δινησεί (295 a 9 εἰ βία νῦν ἢ γῇ μένει, καὶ συνῆλθεν ἐπὶ τὸ μέσον φερομένη διὰ τὴν δίνησιν).

a 27. οὐδὲ πλάττειν βουλομένοις, "even if we chose to allow fancy free play." Cf. 411 b 18 and *De Cael.* iii. 1, 299 b 16 πῶς διοριστοὶ μὴ βουλόμενοι πλάττειν; *frag.* 173, 1506 b 44 οὐδ' ἐγένετο [sc. τὸ τεῖχος], ὃ δὲ πλάσας ποιητῆς ἠφάνισεν. There is here an obvious allusion to the Platonic myths. The verb πλάττειν is frequent in Plato in this sense, but metaphorically of fashioning speech, e.g. *Apol.* 17 c πλάττοντι λόγους, and in this more extended sense of imagining or inventing (fingere animo) as e.g. *Phaedr.* 246 c πλάττομεν οὔτε ἴδοντες οὐθ' ἱκανῶς νοήσαντες θεόν, *Laws* 712 b πλάττειν τῷ λόγῳ τοὺς νόμους, *Rep.* 588 b εἰκόνα πλάσαντες τῆς ψυχῆς λόγῳ, *Tim.* 26 e μὴ πλασθέντα μῦθον, ἀλλ' ἀληθινὸν λόγον. The passage last cited opposes πλασθεῖς to ἀληθινός and illustrates the Aristotelian use of πλάσμα and πλασματίας for fiction and fictitious.

a 28. τούτων γὰρ τῶν σωμάτων αἱ κινήσεις αὗται, as explained in *De Cael.* iv., cc. 3, 4, e.g. 311 a 19 φαίνεται πυρὸς μὲν τὸ τυχὸν μέγεθος ἄνω φερόμενον, εἰρὴν μὴ τι τύχη κωλύον ἕτερον, γῆς δὲ κάτω. Cf. 11. 5, 304 b 17 ὥσπερ καὶ τὸ πῦρ ὅσῳ ἂν πλείον γίγνηται, φέρεται θάπτον ἄνω τὴν αὐτοῦ φοράν, iv. 2, 308 b 13 νῦν γὰρ τὸ μὲν πῦρ ἀεὶ κοῦφον καὶ ἄνω φέρεται, ἢ δὲ γῇ καὶ τὰ γεγῆρα πάντα κάτω καὶ πρὸς τὸ μέσον.

a 29. ὃ δ' αὐτὸς λόγος καὶ περὶ τῶν μετὰ, int. κινήσεων, as Barco saw. The elements air and water rise above earth but sink below fire. Their motions, then, being directed to quarters of the universe intermediate between the extremity and the centre, may be justly termed "intermediate motions." "The same argument" is as follows: if the soul tends to move towards the intermediate regions of the universe, it will be composed of either air or

water, since these are the elements which naturally tend to move towards the localities intermediate to the centre and the extremity of the universe. See the chapters referred to in the last note, especially *De Cael.* IV. 4, 311 a 22 ἄλλως δὲ βαρὺ καὶ κοῦφον, οἷς ἀμφοτέρω ἐπάρχει· καὶ γὰρ ἐπιπολάζουσί τισι καὶ ὑφίστανται, καθάπερ ἀήρ καὶ ὕδωρ· ἀπλῶς μὲν γὰρ οὐδέτερον τούτων κοῦφον ἢ βαρὺ· γῆς μὲν γὰρ ἀμφοῦ κουφότερα (ἐπιπολάζει γὰρ αὐτῇ τὸ τυχὸν αὐτῶν μόριον), πυρὸς δὲ βαρύτερα (ὑφίσταται γὰρ αὐτῶν ὅποσον ἂν ἢ μόριον), πρὸς ἑαυτὰ δὲ ἀπλῶς τὸ μὲν βαρὺ τὸ δὲ κοῦφον· ἀήρ μὲν γὰρ ὅποσος ἂν ἢ, ἐπιπολάζει ὕδατι, ὕδωρ δὲ ὅποσον ἂν ἢ, ἀέρι ὑφίσταται. The result is summed up c. 5, 312 a 26 καὶ ὕδωρ μὲν πλὴν γῆς πᾶσιν ὑφίσταται, ἀήρ δὲ πλὴν πυρὸς πᾶσιν ἐπιπολάζει.

a 31. κινεῖν τὰς κινήσεις, "move it with those motions," i.e. "impart those motions." For the contained accusative with the transitive verb cf. *infr.* 432 b 13 τί τὸ κινεῖν τὴν πορευτικὴν κίνησιν and with the middle or passive *supr.* 406 a 13 sq., *infr.* a 32 sq., b 5 sq., 410 b 20, *Ind. Ar.* 391 a 16—21: and for the argument *Phys.* VIII. 5, 257 b 25 εἴτι ἢν κινεῖ κίνησιν, καὶ κινεῖται ἂν.

a 32. ἀντιστρέψασιν, "convertendo," "conversely," the logical term which denotes the inference of a new proposition, having for its subject the predicate and for its predicate the subject of the proposition from which the inference is drawn. Thus from the proposition, Some philosophers were Athenians, we may infer *convertendo* that some Athenians were philosophers. By thus converting the proposition we no longer make that which is prior in the order of causation prior for knowledge, but conversely; i.e. we argue *a posteriori* instead of *a priori*. We have to start with the motions of the body as prior and better known to us, 413 a 11 *note*, because that which essentially and in the order of nature is prior, viz. the motion of soul, is unknown to us. Cf. Philop. 106, 18 ἐκ τῶν σαφεστέρων ποιεῖται τὴν διδασκαλίαν καὶ ἡμῖν γνωριμωτέρων, λέγω δὴ τοῦ σώματος.

406 b 1. τὸ δὲ σῶμα κινεῖται φορᾷ· ὥστε καὶ ἡ ψυχὴ. Bonitz (*Hermes* VII. pp. 421—8) thus sums up the argument of a 30—b 5: It is a fact (φαίνεται) that soul sets body in motion. For those who ascribe to soul self-motion, it is reasonable to assume that the soul produces those motions in the body to which it (the soul) is itself subject. Of the motions of body it is certain that they are motions in space. Hence the logical conclusion for the soul is ὥστε καὶ ἡ ψυχὴ...μεθισταμένη. What (asks Bonitz, l.c. p. 423) do these words mean? The two premisses are (1) The motions of soul are those of the body, (2) the motions of the body are motions in space. In (2) only φορὰ, a γένος κινήσεως, is posited, not the particular species (βάδισις, ἄλσις, πτήσις. Cf. 406 a 9 *note*, and *Ind. Ar.* 132 a 44). There can, then, be no other conclusion than this: "Hence the motions of soul are motions in space" (es kann mithin nichts anderes erschlossen werden, als: folglich sind die Bewegungen der Seele räumliche Bewegungen). The result thus obtained seems absolutely incontrovertible. Bonitz goes on to enquire: Can the conclusion logically required be found in the words of the text? (Steht dies in dem vorliegenden Worten?) It seems to me that this is undoubtedly the case if we make a pause after ὥστε καὶ ἡ ψυχὴ [int. κινεῖται φορᾷ]. A. sometimes omits the predicate after ὥστε, *Ind. Ar.* 873 a 18 ὥστε sine verbo *Meteor.* IV. 10, 388 a 22 ὦλη τὸ ξηρὸν καὶ ὑγρὸν, ὥστε ὕδωρ καὶ γῆ. A few examples may suffice: *Phys.* VIII. 6, 259 b 18 μεταβάλλει γὰρ τὸν τόπον τὸ σῶμα, ὥστε καὶ τὸ ἐν τῷ σώματι ὄν καὶ τὸ ἐν τῇ μοχλείᾳ κινεῖται ἐαυτοῦ (sc. μεταβάλλει τὸν τόπον), *Pol.* 1252 b 20 πᾶσα γὰρ οἰκία βασιλεύεται ὑπὸ τοῦ πρεσβυτάτου, ὥστε καὶ αἱ ἀποικίαι διὰ τὴν συγγένειαν [int. βασιλευνται], 1253 a 14 ὁ δὲ λόγος ἐπὶ τῷ δηλοῦν ἐστὶ τὸ συμφέρον καὶ τὸ βλαβερόν, ὥστε καὶ [sc. ἐπὶ τῷ δηλοῦν]

τὸ δίκαιον καὶ τὸ ἄδικον, *Etih. Nic.* 1133 a 20 πάντα γὰρ μετρεῖ, ὥστε καὶ τὴν ὑπεροχὴν καὶ τὴν ἔλλειψιν [int. μετρεῖ], πόσα ἅπτα δὴ ὑποδήματ' ἴσον οἰκία ἢ τροφή, *Μεταφῆ.* 1039 a 33 ὥστε καὶ τὸ ζῶον [int. ἀνάγκη τόδε τι σημαίνειν κτέ.], 1055 a 22 ὅλως τε εἰ ἔστιν ἡ ἐναντιότης διαφορά, ἢ δὲ διαφορὰ δυοῖν, ὥστε καὶ ἡ τέλειος [sc. διαφορὰ δυοῖν], 1078 a 8 ὥστε καὶ ἡ μήκη μόνον καὶ ἡ ἐπίπεδα [int. ἴδια πάθη ἔστιν], 1078 a 11 ὥστε ἄνευ τε μεγέθους μᾶλλον ἢ μετὰ μεγέθους, καὶ μάλιστα ἄνευ κινήσεως [int. ἔχει τὰκριβές]. By a similar ellipse here also exactly the conclusion which the premisses warrant is left to be understood: ὥστε καὶ ἡ ψυχὴ [int. κινεῖται φορᾶ]. Cf. *Them.* 16, 16 H., 29, 15 Sp. τὸ δὲ σῶμα κινεῖται κατὰ τόπον, ὥστε καὶ ἡ ψυχὴ κατὰ τόπον ἦτοι γε ὅλη ἢ κατὰ μόρια μεθισταμένη. If so, μεταβάλλοι ἂν κατὰ τὸ σῶμα should not be emended but simply excised. It may be objected to the minor premiss that the body undergoes not only φορὰ but also ἀλλοίωσις and αὔξησης. The reply is that, as we have seen (see *note* on a 16 *supra*), both ἀλλοίωσις and αὔξησης imply φορὰ and are at any rate ἐν τόπῳ.

**b 2.** μεταβάλλοι ἂν κατὰ τὸ σῶμα. Bonitz l.c., having clearly laid down that the conclusion of A.'s syllogism ought to contain a determination of the kind of change or motion which belongs to soul, viz. motion in space, examines the traditional text to see whether this determination is implied (1) in μεταβάλλοι, (2) in κατὰ τὸ σῶμα, (3) in μεθισταμένη. (1) Trend. explains "μεταβάλλοι ἂν, i.e. τόπον," but, if μεταβάλλειν of itself here meant "to move from place to place," as it unquestionably does in the passages cited, *Ind. Ar.* 458 b 50—54, then A. in his conclusion has expressed the general term, change or motion, and left the reader to supply for himself the particular kind of change or motion to be inferred from the premisses. This seems very improbable. Again, if (2) we look for what we want in κατὰ τὸ σῶμα we do indeed find it there, provided that the words are understood with *Simpl.* 37, 4 *τουτέστι καθάπερ σῶμα τοπικῶς*, and that this agreement between the motions of soul and body be construed generally, and not as an exact correspondence in every detail, such as is implied at b 15 sq., which would render impossible the further inference that the soul may leave the body and return to it. There is no objection on the score of language to interpreting μεταβάλλειν κατὰ τὸ σῶμα "to undergo the same species of change as the body." But the expression is almost incredibly clumsy, because then the conclusion would be an exact repetition of the major premiss, μεταβάλλει κατὰ τὸ σῶμα being identical with ἡ ψυχὴ καὶ αὐτὴ ταύτην τὴν κίνησιν κινεῖται ἢν τὸ σῶμα (a 32 sq.), while there is no inference from the minor at all, and in particular no technical term corresponding to φορὰ to indicate the kind of change or motion inferred for the soul. Can the missing complement to μεταβάλλοι ἂν be discovered (3) in μεθισταμένη? The verb is used *Ind. Ar.* 449 b 13 *proprie de mutato loco*. But Bonitz replies that the whole meaning of the words μεταβάλλοι ἂν... μεθισταμένη would form part of the conclusion from the premisses, whereas this whole meaning goes far beyond the premisses. Further, if κατὰ τὸ σῶμα is to be taken with μεθισταμένη, the further inference that soul can leave the body and return to it is again rendered impossible.

Thus failing to obtain from the text the conclusion logically required, Bonitz proposed to alter κατὰ τὸ σῶμα into κατὰ τόπον. In support of the emendation he urges that, in all places of his paraphrase which correspond to the words, Themistius has κατὰ τόπον: 16, 13 H., 29, 11 Sp. ἐπόμενον ἂν οὕτω καὶ εὐλογον εἶη καὶ τὸν τρόπον τῆς κινήσεως τὸν αὐτὸν αὐτὴν τε κινεῖσθαι καὶ κινεῖν τὸ σῶμα· εἰ δὲ τοῦτο ἀκόλουθον, δηλονότι καὶ ἀντιστρέψασιν ἀληθές, ὥς κινεῖται τὸ σῶμα, οὕτω κινεῖσθαι καὶ τὴν ψυχὴν. τὸ δὲ σῶμα κινεῖται κατὰ τόπον, ὥστε καὶ

ἡ ψυχὴ κατὰ τόπον, ἦτοι γε ὅλη ἢ κατὰ μόρια μεθισταμένη (cf. 16, 35 sq.: 16, 38 H., 30, 13: 30, 15: 30, 18 Sp.) without ever indicating that these words are an explanatory inference from another expression. So, too, Philoponus, who twice refers to our passage, viz. 106, 19 ἐπειδὴ γὰρ τὸ σῶμα, φησί, φορὰν κινεῖται, καὶ τὴν ψυχὴν ἀνάγκη φορὰν κινεῖσθαι, 107, 20 ὥστε καὶ αὕτη κινήσεται κατὰ τόπον ἢ ὅλη ἢ κατὰ μόρια μεθισταμένη ἴσως, ὅλη μὲν ὅλον κινούσα τὸ σῶμα, κατὰ μόρια δὲ μέρος αὐτοῦ κινούσα. Neither Them. nor Philop. mentions κατὰ τὸ σῶμα, but the words are found in the text used by Simpl. (37, 4), whose explanation of them has been cited above. As I have already said, the end proposed by the emendation is as easily attained by excising μεταβάλλοι ἂν κατὰ τὸ σῶμα from the text as a clumsy marginal comment, by which some reader unfamiliar with A.'s ellipses supplied what seemed to him to be the missing conclusion. It will be observed that the words of Simplicius τούτῃσι καθάπερ σῶμα τοπικῶς would be equally in point if his lemma stopped short at ὥστε καὶ ἡ ψυχὴ, while the explanation of Philop. (107, 20) favours an elliptical conclusion with ὥστε quite as much as does that of Them. (16, 16 H., 29, 15 sq. Sp.), both already cited. It would of course be possible to place a full stop after ψυχὴ, and by inserting δ' before ἂν to make a new sentence μεταβάλλοι δ' ἂν...μεθισταμένη. This new sentence would not be the conclusion of the syllogism, and so far some of the difficulties pointed out by Bonitz would disappear, but others would remain. If we must retain and may not emend μεταβάλλοι ἂν κατὰ τὸ σῶμα, I am inclined to accept Mr Shorey's suggestion (*A. J. Ph.* XXII. 153) that κατὰ τὸ σῶμα may be taken locally "within the body," and not in the sense given to the words by Simplicius (37, 4). Cf. κατὰ πᾶν τὸ σῶμα 408 a 16, where, however, motion is not implied. "This gives point," Mr Shorey urges, "to the following antithesis: (if it can move in the body) it would follow that it can also, καί, go forth from the body and return. The same thought seems to be implied in the comparison with the quicksilver," 406 b 18 sqq.

b 2. ἡ ὅλη ἢ κατὰ μόρια μεθισταμένη. When it has been proved that the soul is subject to spatial motion, κινεῖται φορὰ or κατὰ τόπον, two alternatives present themselves. There are two species of spatial motion. Either the whole of a thing may change its place: this is motion of translation. Or the parts may move relatively to each other while the whole remains in the same place, e.g. when a sphere revolves or a top spins. Cf. *De Gen. et Corr.* I. 5, 320 a 19 τὸ μὲν γὰρ φερόμενον ὅλον ἀλλάττει τόπον, τὸ δ' αἰξανόμενον ὥσπερ τὸ ἐλαυνόμενον· τούτου γὰρ μένοντος τὰ μόρια μεταβάλλει κατὰ τόπον, οὐχ ὥσπερ τὰ τῆς σφαίρας· τὰ μὲν γὰρ [the parts of the revolving sphere] ἐν τῷ ἴσῳ τόπῳ μεταβάλλει τοῦ ὅλου μένοντος, τὰ δὲ τοῦ αἰξανόμενου αἰεὶ ἐπὶ πλείῳ τόπῳ [sc. μεταβάλλει], Pl. *Law*s 893 C τὰ τὴν τῶν ἐσώτων ἐν μέσῳ λαμβάνοντα δύναμιν λέγεις, φήσομεν, ἐν ἐνὶ κινεῖσθαι, καθάπερ ἡ τῶν ἐσώτων λεγομένων κύκλων στρέφεται περιφορὰ, where the rotation of a sphere upon a fixed axis is illustrated by a simpler case, viz. the revolution of a circle about a fixed centre. Them. and Simpl. do not comment on these words: the inference is that they found no difficulty in them. Philoponus gives an erroneous interpretation (107, 21) ὅλη μὲν ὅλον κινούσα τὸ σῶμα, κατὰ μόρια δὲ μέρος αὐτοῦ κινούσα, possibly understanding μεθισταμένη in an active sense, at all events reading into the second clause κατὰ μόρια μεθισταμένη an alien idea derived from a forced interpretation of ὅλη...μεθισταμένη. Conrad Gesner gave approximately the right explanation: "ἢ ὅλη, ut si recta moveretur, ἢ κατὰ μόρια, ut si circulo," which Trend. deliberately rejected: "Minime; neque enim ad motus genus pertinet. Haec potius est sententia; Sequeretur animam vel omnem vel eius inter se facultates tanquam partes locum mutare." For this he is rightly

censured by Bonitz, l.c., p. 426, who remarks that to introduce the faculties of the soul at this point is quite inadmissible, since the inconsistencies which A. deduces from the theory under examination all relate to the nature of the soul itself conceived as existing and moving in space.

b 3 εἰ δὲ τοῦτ' ἐνδέχεται. In editione A videtur fuisse εἰ δὲ τοῦτο, ἐνδέχουτ' ἂν καὶ ἐξελθοῦσαν εἰσεῖναι πάλιν. Torstrik inferred this from the variants of the inferior MSS. (see *critical notes*), and it is actually found in γ, of which he had not a collation. Bonitz (l.c.) argues that the reading of the inferior MSS. ought here to be preferred to E, because it is not a question of possibility: that the soul moves in space has been demonstrated as necessarily true. Even granting this, A. might make a compendiary use of ἐνδέχεται: "If this, as already demonstrated, is possible, a further possibility will follow, viz. etc." Torstrik himself regarded the variation here between what he calls the two editions as due merely to considerations of style: videtur autem correxisse, quia paulo ante usus erat formulâ eâ quae est εἰ δὲ τοῦτο a 32, an admission which goes a long way in the direction of those who see in the so-called *editio prior* of Book II. merely a paraphrase.

b 3 καὶ ἐξελθοῦσαν εἰσεῖναι πάλιν ἐνδέχουτ' ἂν, int. τὴν ψυχὴν. This is intended by A. as a *reductio ad absurdum* of the supposition that the soul moves in space. Such absence from the body and return to it are common in the folklore and magic stories of all ages. Cf. Frazer, *Golden Bough*, ch. ii. § 2, "The nature of the soul," and ch. iv. § 3, "The external soul in folk-tales." Cf. also Vol. II., pp. 123—5 (1st ed.), on traces in folk-tales of belief in the resurrection of animals.

b 4 ἀνίστασθαι. Trend. compares *Il.* XXI. 55 ἥ μάλα δὴ Τρῶες μεγαλήτορες, οὐσπερ ἔπεφνον, | αὐτὶς ἀναστήσονται ὑπὸ ζόφου ἡρώεντος. His suggestion that the clause is the interpolation of a Christian scribe hardly merits serious consideration. That the dead should rise again is to Greek ideas the typical instance of an event antecedently incredible as reversing the established order of nature. Cf. Hdt. III. 62, cited by Bonitz αὐτὸς...ἔθανψά μιν χερσὶ τῆσι ἐμεωτοῦ. εἰ μὲν νυν οἱ τεθνεώτες ἀνεστᾶσι, προσδέκῃ τοι καὶ Ἀστυάγεια τὸν Μῆδον ἐπαναστήσεσθαι· εἰ δ' ἔστι ὥσπερ πρὸ τοῦ, οὐ μὴ τί τοι ἔκ γε ἐκείνου νεότερον ἀναβλαστῇ.

b 5 τὴν δὲ κατὰ συμβεβηκὸς κίνησιν. This really goes back to 406 a 14 εἰ δὲ κινεῖται μὴ κατὰ συμβεβηκός. The supposition there brought forward has now been exhaustively treated. A. next turns to the alternative hypothesis and shows that, if the motion asserted of the soul be merely accidental (κατὰ συμβεβηκός, not καθ' αὐτὸ or φύσει), such motions may equally well be due to something other than the soul itself. Philop. 109, 15 τὸ μὲν γὰρ κατὰ συμβεβηκὸς κινούμενον καὶ αὐτὸ ἑαυτῷ δύναιτο ἂν αἴτιον εἶναι τῆς τοιαύτης κινήσεως καὶ ὑπ' ἄλλου τὴν αὐτὴν ταύτην κινεῖσθαι. A movement of the animal is occasioned by an impulse of its soul (κατὰ ψυχικὴν ὁρμὴν κινουμένου τοῦ ζώου): in this case the soul of the animal is adventitiously moved, but by itself (ὑφ' ἑαυτῆς κατὰ συμβεβηκὸς κινεῖται). But suppose the animal to be impelled by external agency; in that case it is also adventitiously moved, but by something else. It is important to remember that A. is stating his own opinion in the sentence before us, supported by the evidence of facts. See the recapitulation, 408 a 30—34. The body is moved by something external (ὑφ' ἑτέρου) and the soul, through its inclusion in the body thus moved (406 a 5 τῷ ἐν κινουμένῳ εἶναι), is also moved, but indirectly, *per accidens*. The optatives with ἂν in b 6 κινούτο ἂν, ὥσθ' εἴη ἂν are purely potential.

b 6 καὶ ὑφ' ἑτέρου, by something else as well as by itself, in the way

described in 408 a 32 sq.: cf. 408 a 31 *κινεῖν ἑαυτήν* (κατὰ συμβεβηκός). Cf. on this point *Phys.* VIII. 6, 259 b 28 οὐκ ἔστι δὲ τὸ αὐτὸ τὸ κινεῖσθαι κατὰ συμβεβηκός ὑφ' αὐτοῦ καὶ ὑφ' ἑτέρου· τὸ μὲν γὰρ ὑφ' ἑτέρου ὑπάρχει καὶ τῶν ἐν τῷ οὐρανῷ ἐνίαις ἀρχαῖς (the spirits of the spheres), ὅσα πλείους φέρεται φοράς, θάτερον δὲ τοῖς φθαρτοῖς μόνον.

b 7 οὐ δὲ δὲ...8 πλὴν εἰ μὴ κατὰ συμβεβηκός. "But that which has the attribute of self-motion as part of its very nature ought not, except accidentally, to be moved by something external." *Ind. Ar.* 604 a 28 πλὴν εἰ μὴ, pleonastice addita negatione *Anal. Prior.* I. 27, 43 a 39, Waitz ad loc. "πλὴν εἰ μὴ pleonasmus est, qui tamen ferri potest, quum πλὴν saepius non excipiendi vim habet, sed definiendi et limitandi." A. is still objecting to the proposition, "The soul is self-moved," although the ground is shifted from καθ' αὐτὸ κινεῖσθαι to κατὰ συμβεβηκός κινεῖσθαι. Cf. Philop. 109, 11 βούλεται πρὸς τὸ αὐτοκίνητον ἐνστήναι. The ancient commentators were puzzled by the last clause, "except accidentally." What, we ask, is the exceptional case in which that which has the power of self-motion is also *per accidens* moved by something external? Philoponus thinks that the motion communicated by external force is never the same as that which the self-moving soul possesses in its own nature. But this is doubtful. Themistius and Simplicius agree in thinking that it is precisely the *concurrence* of the external impulse with the soul's self-motion which happens only incidentally.

b 8 ὥσπερ οὐδὲ...10 ἑτέρου ἔνεκεν. This sentence serves, by two instances, to show how much is meant by ὑφ' ἑαυτοῦ κινεῖσθαι as an essential attribute. The chiasmus should be noted: τὸ καθ' αὐτὸ ἀγαθὸν is opposed to (τὸ) ἑτέρου ἔνεκεν, that which is good in itself to that which is so only as a means to something else: while (τὸ) δι' αὐτὸ is opposed to (τὸ) δι' ἄλλο. In *Eth. Nic.* 1096 b 16 we read καθ' αὐτὰ δὲ ποῖα θείη τις ἄν; ἢ ὅσα καὶ μονούμενα διώκεται, οἷον τὸ φρονεῖν καὶ ὁρᾶν καὶ ἡδοναί τινες καὶ τιμαί; ταῦτα γὰρ εἰ καὶ δι' ἄλλο τι διώκομεν, ὅμως τῶν καθ' αὐτὰ ἀγαθῶν θείη τις ἄν. To meet the case of such goods we must suppose the qualification εἰ μὴ κατὰ συμβεβηκός, which stands in the main clause (406 b 8), to be repeated in the illustration.

b 10 τὴν δὲ ψυχὴν...11 ἕκπερ κινεῖται. This statement becomes clearer as A.'s own theories of αἰσθησις and ὁρεξις are unfolded in the present treatise. As to the former, we may anticipate by a reference to 416 b 33 sq., 417 a 13, 17 sq., where κινεῖσθαι, πάσχειν and ἀλλοίωσις (a species of κίνησις), are used almost indifferently to describe the effect which the αἰσθητὸν produces upon the soul in actual perception. Subsequently 417 b 2 sqq. ἐνεργεῖν is preferred (εἰς αὐτὸ γὰρ ἡ ἐπίδοσις καὶ εἰς ἐντελέθειαν 417 b 6; cf. 425 b 26—426 a 8, 431 a 4—7), and on the whole ποιεῖν, πάσχειν are more in favour than κινεῖν, κινεῖσθαι. For ὁρεξις it is sufficient to refer to III., cc. 10, 11, e.g. 433 a 18—30, 433 b 11—18, 433 b 27—434 a 9. Occasionally even the rational soul is said to be "moved": e.g. 431 b 5 and possibly 433 a 24.

b 11 ἀλλὰ μὴν καὶ εἰ κινεῖ...15 αὐτῆς καθ' αὐτήν. Another objection. Motion is displacement, and therefore any motion of the soul would mean that the soul is displaced or dislodged from its nature, whence we are intended to infer that it would cease to be soul. So that the hypothesis of self-motion as belonging to the nature of soul is self-destructive. Alex. Aphr. discusses this expression, ἀπ. καὶ λύσ. II. 2. 46, 22—47, 27 (Bruns).

b 13. ἔκστασις ἔστι τοῦ κινουμένου ἢ κινεῖται. This definition is not to be found in the *Physics*, but it can be easily deduced from the more abstract form of the definition usually given, viz. "the realisation of what is potentially existent as such," or "the actualisation of what is undeveloped." This may be



made clear by considering one or two of the species of motion, e.g. under qualitative change (*ἀλλοίωσις*) a thing which was formerly white becomes black and then there is a displacement (*ἐκστασις*) of the quality "white." Again, take quantitative change: a tree grows to twice its former height, which has thus been displaced. Finally, and here the meaning of *ἐκστασις* is best seen, in the case of locomotion (*φορά*) from *A* to *B*, the "place" or spatial position of the thing which has moved is no longer *A* but *B*.

**b 13.** *ἐξίσταται' ἂν ἐκ τῆς οὐσίας.* The last three words are added because the soul is supposed to move by its very nature. The inference is obtained by pressing the analogy with the motion of material things regarded as displacement. Take the moving body of the previous note. When at *B* it is no longer at *A*, though this change of place leaves it in other respects unaffected: whereas *ἀλλοίωσις* destroys or modifies the former quality when it substitutes a new one, and *αὔξησις* alters the quantity of *τὸ κινούμενον*. Cf. *Phys.* VIII. 7, 261 a 20, where *A.* is arguing that *φορά* is less liable to this "displacement of essence" than the other modes of motion: *ἡκιστα τῆς οὐσίας ἐξίσταται τὸ κινούμενον τῶν κινήσεων ἐν τῷ φέρεσθαι· κατὰ μόνον γὰρ οὐδὲν μεταβάλλει τοῦ εἶναι, ὥσπερ ἀλλοιούμενου μὲν τὸ ποιοῦν, αὔξανόμενου δὲ καὶ φθίνοντος τὸ ποσόν.* Similarly the soul, if self-motion is its essential nature, its logical essence, is, *quod* moved, no longer after motion what it was before. It might even be said to have become *παρὰ φύσιν*. Cf. *De Cael.* I. 3, 286 a 18—20 *ὑπέρτερον δὲ τὸ παρὰ φύσιν τοῦ κατὰ φύσιν, καὶ ἐκστασίς τις ἔστιν ἐν τῇ γενέσει τὸ παρὰ φύσιν τοῦ κατὰ φύσιν.* Cf. Philop. 113, 14 καὶ ἡ ψυχὴ οὖν εἰ καθὼ ψυχὴ ἔστι καὶ κατ' οὐσίαν κινεῖται, ἐκσταίῃ ἂν τῆς οὐσίας ἑαυτῆς καὶ φθαρήσεται. Philop. appeals to Pl. *Phaedr.* 245 E. He justly remarks (114, 12) that *A.*'s contention is *οὐκ αὐτὴ ἑαυτὴν κινεῖ, ἀλλ' ἔστω ἐν αὐτῇ τὸ μὲν κινεῶν τὸ δὲ κινούμενον.* Cf. 409 a 10—18.

**b 15** *ἐνιοι δὲ...16 ὥς αὐτὴ κινεῖται.* This view attributes not merely spatial motion in general to the soul but movements corresponding exactly in detail to those of the body (406 a 31). It might have been held by any pre-Socratic philosopher who regarded the soul as a material thing enclosed in the body. The view implies (1) the soul is in the body, (2) the soul has definite spatial motions, (3) these it communicates to the body in which it resides. From Lucretius III. 370—3 it would appear that atoms of soul and atoms of body are, according to Democritus, arranged alternately in the animal, *singula praevis adposita*.

**b 17.** *οἷον Δημόκριτος.* Cf. 409 a 32—b 4, Aet. IV. 3, 5 (*Doxogr. Gr.* 388) *ὅπερ σῶμα εἶναι.* Φιλίππου. *Frag. Com. Gr.* II. 172, fr. 22 Koch. Philippus was a son of Aristophanes, and a poet of the Middle Comedy. He wrote among other plays a *Daedalus*. Them. (19, 10 H., 34, 27 Sp.) says that Daedalus in this play claims to have made a moving Aphrodite: *φησὶ γὰρ ὁ Δαίδαλος παρ' αὐτῷ κινουμένην ποιῆσαι τὴν ξυλίνην Ἀφροδίτην ἐγχείας ἄργυρον χυτόν.* Cf. Meineke, *Frag. Com. Gr.* I. 340 sqq.; Philop. 114, 37.

**b 20** *κινουμένας γάρ...22 τὸ σῶμα πᾶν.* Join *διὰ τὸ πεφυκεῖναι μηδέποτε μένειν* with *κινουμένας*. Cf. 404 a 11 sq. This quality of restless mobility is due ultimately to their shape, 405 a 8—13. The spherical atoms are here designated "indivisible spheres." Cf. 409 a 12 *σφαίριων*, 409 b 9 *σφαίρας μικράς*. Being mobile themselves, they communicate motion to whatever they come in contact with, in this case the atoms of the body in which they are enclosed. Cf. generally 404 a 5—16, 409 a 31—b 11.

**b 21.** *συνεφέλκεν = συγκινεῖν ἑαυταῖς.* This explanation of the motion of the body reduces it to a species of push and leverage (Philop. 114, 29 *τῷ κινεῖσθαι τὴν ψυχὴν κινεῖν τὸ σῶμα ὥσει καὶ μοχλεῖα τινί*), which, as Philop. observes, is equally involved in the argument adduced above (406 a 30—b 5).

b 22 ἡμεῖς δ' ἐρωτήσομεν...23 ταῦτα ταῦτα. The constant motion of the atoms of soul is put forward as the reason why the body moves: what then is the cause of its rest? Cf. *Phys.* VIII. 6, 258 b 23 δῆλον γὰρ ὡς αἴτιον τοῖς αὐτὰ ἐαυτὰ κινουσίην ἐστὶ τι τοῦ ὅτε μὲν εἶναι ὅτε δὲ μή.

b 24 ὅλως δ' οὐχ οὕτω...25 νοήσεως. A general argument, disposing of the whole theory that soul moves itself and the body thus mechanically by an appeal to the fact (*φαίνεται*) that man is acted upon by final causes. Cf. the sweeping argument *De Gen. et Corr.* II. 6, 334 a 10—15. We may paraphrase οὕτω "by impact and pressure," physical causes which imply contact. To this mode of causation A. opposes a species of purpose *προαίρεσις τις*, which he subsumes under the general notion of thought (*νόησις*). Cf. 433 b 11 τοῦτο γὰρ [int. τὸ ὀρεκτόν] κινεῖ οὐ κινούμενον τῷ νοηθῆναι ἢ φαντασθῆναι. In the full discussion of *προαίρεσις* in *Eth. Nic.* III., c. 2 we are told, amongst other things (1112 a 15), ἡ *προαίρεσις* μετὰ λόγου καὶ διανοίας, and, as Trend. remarks, *νόησις* in the present passage must be taken in this wider and vaguer sense. It does not bear the special sense emphasised e.g. in 430 a 26, or of the passages in which *νοῦς θεωρητικός* is distinguished from *νοῦς πρακτικός*. Cf. III., c. 10, esp. 433 a 9—13, which shows, if proof were needed, that for irrational animals *φαντασία* ranks as *νόησις τις*. Cf. also 429 a 4—9. Properly speaking, no irrational animal has *προαίρεσις*. *Eth. Nic.* 1111 b 8 sq. τοῦ μὲν γὰρ ἐκουσίον καὶ παῖδες καὶ τᾶλλα ζῶα κοινωνεῖ, *προαίρεσέως* δ' οὐ, καὶ τὰ ἐξ αἴφνης ἐκούσια μὲν λέγομεν, κατὰ *προαίρεσιν* δ' οὐ. Alex. Aphr. neatly sums up *De An. Mantissa* (106, 11) ἡ δὲ ψυχὴ κινεῖ τῷ κατ' αὐτὴν ἡμᾶς νοεῖν τε καὶ *προαίρεῖσθαι*· τὸ μὲν οὖν ἀγαθὸν τῷ νοηθῆναι κινεῖ, ἡ δὲ ψυχὴ τῷ νοῆσαι.

b 26. ὁ Τίμαιος. The article denotes the principal speaker in the dialogue of Plato. The form of the reference can be paralleled elsewhere in A., e.g. *Pol.* 1342 a 32 ὁ ἐν τῇ Πολιτείᾳ Σωκράτης, 1261 b 19, 21, 1316 a 2 *et saepe*. Again *ib.* 1265 a 11 πάντες οἱ τοῦ Σωκράτους λόγοι, where by an odd lapse of memory A. includes the *Laws*, although Socrates is not mentioned as taking part in that Platonic dialogue. Similarly 1260 a 22—28 there seems to be a clear reference to the *Menos*, although the practice of Gorgias is merely reported in the dialogue, in which he takes no part. We may suppose that Plato in putting his views into the mouth of Timaeus, the Pythagorean philosopher of Locri in Italy, was in this case guided by the consideration that a physical discourse would have been unsuitable in the mouth of Socrates. Cf. Xen. *Memor.* I. 1, §§ 11—15; Pl. *Apol.* 19 B—D, 26 D sqq.; Ar. *Metaph.* 987 b 1 sq.

b 26 φυσιολογεῖ...27 τὸ σῶμα. A. uses *φυσιολόγος* in nearly the same sense as *φυσικός*. In treating of the history of philosophy he is fond of applying the name to the early Ionians, οἱ πρῶτοι *φυσιολογήσαντες*. *Metaph.* 986 b 14, 989 b 30, 992 b 4. The verb, elsewhere used absolutely, *Metaph.* 988 b 27 *φυσιολογεῖν περὶ πάντων*, is here constructed with accusative and infinitive, "gives a physicist's account of the matter to the effect that the soul sets the body in motion."

b 27 τῷ γὰρ κινεῖσθαι αὐτὴν...407 a 2 κινήσεις. Here follows an abstract of the famous passage, known even in antiquity as the *Ψυχογονία* of the *Timaeus* (34 B sqq.). The narrative is obviously mythical in form and, partly for this reason, has been the occasion of much controversy in all ages. The divergent opinions of the ancients may be gathered from Plutarch's tract *De Animae Procreatione in Timaeo Platonis* as well as from the commentaries of Proclus and Chalcidius on the *Timaeus*. A. in the present passage appears to treat the account as literal statement of fact, and bases his objections upon this interpretation as if there were no other; although, as we learn from Plutarch,

contemporary Platonists maintained that the story of creation was not to be taken literally.

**b 27.** καὶ τὸ σῶμα κινεῖν διὰ τὸ συμπεπλέχθαι πρὸς αὐτό. Cf. Pl. *Tim.* 34 B and 36 E sqq. The soul is moved (b 27) of itself (κινεῖσθαι αὐτήν): this motion it communicates to the body, (34 A) κίνησιν γὰρ ἀπένειμεν αὐτῷ [sc. τῷ κόσμῳ] τὴν τοῦ σώματος οἰκείαν, τῶν ἐπὶ τὴν περὶ νοῦν καὶ φρόνησιν μάλιστα οἶσαν [i.e. circular motion or revolution, περίστροφος]: this is because soul is interwoven with body (συμπεπλεκται): *Tim.* 36 E ἡ δ' ἐκ μέσου πρὸς τὸν ἔσχατον οὐρανὸν πάντῃ διαπλακείσα κύκλῳ τε αὐτὸν ἔξωθεν περικαλύψασα. The soul and body are the soul and body of the universe (κόσμος=οὐρανός=τὸ πᾶν. Cf. 406 b 30, 407 a 3) which is a living creature (*Tim.* 30 B) comprehending in itself all particular living creatures with souls and bodies (*Tim.* 30 C—31 B).

**b 28.** συνεστηκυῖαν γὰρ ἐκ τῶν στοιχείων. Cf. 404 b 17. In *Tim.* 35 A these constituents of soul are designated ταῦτό, θάτερον and οὐσία, the last being itself a compound of the two former. Cf. 36 C, 37 A, B. These στοιχεῖα may have had other names in other expositions of Plato's doctrine, e.g. One, Other, or, with the greater importance assumed by the idea-numbers, One, Two. Even in the *Timaeus* the soul can hardly be described as simple or uncompounded.

**b 29.** μεμερισμένην. The division of the soul is fully described in *Tim.* 35 B—36 B: the "harmonic numbers" being those which determine the great musical scale of three octaves. Cf. 37 A ἀνὰ λόγον μερισθείσα.

**b 29.** ὅπως αἰσθησὶν τε σύμφυτον ἁρμονίας ἔχη. This purpose seems sufficiently indicated by *Tim.* 37 A, B: but the words αἰσθησὶν τε σύμφυτον actually first occur in 42 A, where they are used of the particular soul.

**b 30.** καὶ τὸ πᾶν φέρεται συμφώνους φοράς. In the *Timaeus* the universe is introduced as moving with uniform revolution, 34 A. When the constitution of the soul has been described, we hear of two revolutions in opposite directions, viz. in the circle of the Same and in the circle of the Other. The latter consists of seven circles, the orbits of the planets, including under the term sun and moon. All these revolutions are determined by ratio and harmony κύκλους...ἐν λόγῳ φερομένους 36 D. They are σύμφωνοι because the circle of the Same controls the circle of the Other: 36 C κράτος ἔδωκε τῇ ταυτοῦ καὶ ὁμοίου περιφορᾷ. The adjustment of the velocities of the planetary orbits is explained 39 B.

**b 31** τὴν εὐθυωρίαν...407 a 1 κύκλους. A. has condensed the Platonic account: the most relevant passage is *Tim.* 36 B ταύτην οὖν τὴν ξύστασιν πᾶσαν διπλὴν κατὰ μῆκος σχίσας μέσῃ πρὸς μέσῃ ἐκατέραν ἀλλήλαις οἶον χι προσβαλὼν κατέκαμψεν, εἰς ἐν κύκλῳ ξυνάψας αὐταῖς τε καὶ ἀλλήλαις ἐν τῷ καταντικρὺ τῆς προσβολῆς, καὶ τῇ κατὰ ταῦτα καὶ ἐν ταύτῳ περιαγομένη κινήσει πέριξ αὐτὰς ἔλαβε, καὶ τὸν μὲν ἔξω, τὸν δ' ἐντὸς ἐποίητο τῶν κύκλων...36 D τὴν δ' ἐντὸς [sc. φορὰν] σχίσας ἑξαχῇ ἐπὶ κύκλους ἀνίσους...κατὰ τὰναντία μὲν ἀλλήλοις προσέταξεν ἵεναι τοὺς κύκλους.

**b 31.** τὴν εὐθυωρίαν. The preceding participles agree grammatically with this word, which obviously refers to the soul, the soul of the universe. The same thought might have been expressed by saying that "he bent it" (the soul) "from a straight line (ἐξ εὐθυωρίας) into a circle." As it stands the word, which properly means "straight course" or "direction," must be understood of a "straight piece" or "riband" of soul. In Plato it is the mixture (ξύστασις) constituting soul which is slit or bent. εἰς κύκλον κατέκαμψεν=κατέκαμψεν, εἰς ἐν κύκλῳ ξυνάψας in Pl. *Tim.* 36 B cited above. In Plato the splitting occurs first, the bending afterwards.

**b 32.** καὶ διελὼν...συνημμένους. Plato says (*loc. cit.*) that the Creator, having cleft the soul lengthwise in twain, laid the two halves across in the shape of X,

bent them round and joined them again at a point opposite to that of their original contact (i.e. the centre of X).

**407 a 1. τὸν ἕνα.** By this is meant Plato's circle of the Other, comprehending the orbits of the sun, moon and the five planets known to the ancients (*Timaeus* 36 D cited above). ὡς οὖσας τὰς τοῦ οὐρανοῦ φορὰς τὰς τῆς ψυχῆς κινήσεις. The construction is accus. abs. In this identical proposition A. probably meant φορὰς to be subject. Them. (20, 14 H., 36, 28 Sp.) paraphrases the assumption contained in this clause as follows: καὶ διὰ τοῦτο κύκλῳ κινεῖσθαι τὸν οὐρανόν, ὅτι κύκλος ἦν ἡ ψυχή, that is, the soul of the universe is a circle and therefore the universe itself revolves in a circle. There is apparently no explicit statement of the kind in the dialogue, but as the universe is declared in the strongest terms to be a ζῶον and to be intelligent in virtue of its intellect, which is in soul as soul is in body (30 B), it would seem to be implied that, as in the case of other ζῶα, the movements of the universe are due to its soul, in fact *are* the movements of the soul of the universe. Soul governs body, we are told (34 C), and the circular motion first attributed to the universe as a whole (viz. τὴν τοῦ σώματος οἰκείαν 34 A) is repeatedly attributed to its soul (36 C, E, 37 A).

**407 a 2—b 26.** Here follow eight objections based upon the details of the account in the *Timaeus* literally interpreted. (1) Soul is not a magnitude (407 a 2—10). (2) If it were, it would be impossible to explain the process of thought (407 a 10—22). (3) Thought would be infinite if eternal, whereas all processes of thought are finite (407 a 22—31). (4) Thought would be a recurring cycle (407 a 31—32). (5) As a fact thought implies rest rather than motion (407 a 32—b 2). (6) The inextricable implication of soul with body is a defect of the theory (407 b 2—5). (7) No teleological explanation is furnished of the motion of the universe (407 b 5—11). Finally (8) this theory shares with others the disadvantage that it fails to account for the dependence of a particular soul upon a particular body (407 b 12—26).

**407 a 2. οὐ καλῶς.** Int. ἔχει.

**a 3. τὸ λέγειν τὴν ψυχὴν μέγεθος εἶναι.** Cf. 407 a 16 τί δὲ μέγεθος ἔχειν; A.'s own view, that νοῦς is ἀμερὴς and therefore οὐδὲν ἔχων μέγεθος (cf. *Phys.* VIII. 10, 266 a 10) comes out clearly in the course of the argument. On μέγεθος see *Ind. Ar.* s.v. 448 b 35. It is either (1) the abstract of μέγας, magnitude, size, extension, i.e. ποσότης (cf. 418 a 18), or (2) something concrete, ποσόν τι, συνεχές, διαμετρών. Thus the term is used sometimes for γραμμή, sometimes for ἐπίπεδον. Sed plerumque τὸ μέγεθος ubi ad unam potissimum speciem refertur τὸ σῶμα significat, e.g. the atoms of Democritus are ἀδιαίρετα μεγέθη. Cf. 432 a 4 τὰ μεγέθη τὰ αἰσθητά. Lines, surfaces and solids are the three kinds of μέγεθος: see *note* on 423 a 22. The objection implies that the soul is a mathematical object, but not necessarily that it is material or corporeal. This consideration has its full force whether we interpret the account in the *Timaeus* literally, or treat it as a myth. A circle (or a pair of circles meeting in two points) would be μέγεθος ὡς γραμμή. We must further remember that Plato and Aristotle differ fundamentally as to the nature and mode of existence of mathematical objects, lines, surfaces and solids. To the former they are objective realities and more real than the things of sense: to A. they are indeed ὄντα, but οὐχ ἀπλῶς ὄντα, being obtained by abstraction from things of sense, by whose existence their very existence is conditioned, λόγῳ πρότερον but τῇ οὐσίᾳ ὕστερον.

**a 3. τὴν γὰρ τοῦ παντός, int. ψυχὴν.** The argument is as follows. By soul Plato must mean thinking soul or νοῦς, and not soul as possessed of perception, anger or desire, the movement of which is not circular. But the unity or continuity of

thinking mind, like that of thought, is comparable to that of numerable quantity, not to that of extended or measurable quantity: in other words is a unity of succession (τῷ ἐφεξῆς ἔν), not a unity of co-existence. In *Μεταφρ.* 1020 a 8 quantity is divided into ποσὸν ἀριθμητὸν = πλῆθος and ποσὸν μετρητὸν = μέγεθος: the former being discrete, the latter continuous.

a 4. δῆλον ὅτι...ὁ καλούμενος νοῦς. The subject of βούλεται is ὁ Τίμαιος. A.'s characteristic caution appears in τοιαύτην οἶον and ὁ καλούμενος νοῦς. Cf. 429 a 22, 432 b 26 with *notes*: and for a similar sense of καλούμενος 420 b 28, 423 b 30, 433 a 31.

a 5. οὐ γὰρ δι...ἡ ἐπιθυμητική. In the *Timaeus* these faculties are introduced later, with the creation of particular souls, *Tim.* 42 A. Cf. Them. 20, 23—6 H., 37, 11—16 Sp. In fact, Plato identifies the true nature of soul with reason so fully that he adds an explanation of sensation and emotion almost on the assumption that they are, so to say, disorders of the reason, the processes of pure reason working irregularly under novel conditions (*Tim.* 43 E sqq. Cf. *Phaedo* 65 E—66 E), the processes of particular, not universal, soul.

a 6. οὐ κυκλοφορία. Cf. *Tim.* 43 C—44 C. Them. 20, 25 H., 37, 14 Sp. καὶ γὰρ ἡ αἴσθησις ὥσπερ κατ' εὐθείαν ἐπὶ τὰ ἔξω καὶ παραπλησίως ἡ ὄρεξις. Philop. 125. I εὐθείαι γὰρ τινές εἰσιν [sc. ἡ αἰσθητική ἢ (leg. καὶ) ἡ θυμοειδής ἢ ἡ ἐπιθυμητική]. αἵ τε γὰρ ὄψεισι ἀπὸ τῶν ὀφθαλμῶν κατ' εὐθείαν ἐκπέμπονται καὶ πάλιν ἐν ταῖς ἀνακλάσει παλινδρομοῦσαι κατὰ τὴν αὐτὴν εὐθείαν ἐπανακἀμπτοῦσι (which agrees with *Tim.* 45 C), θυμὸς δὲ καὶ ἐπιθυμία πρόδοι τινές εἰσιν εὐθείας μιμούμεναι.

a 6. ὁ δὲ νοῦς εἰς καὶ συνεχὴς ὥσπερ καὶ ἡ νόησις. Having thus established that the soul of the universe is νοῦς alone to the exclusion of other faculties, A. proceeds with his usual method (cf. I., c. 3 ad init.) to deduce from the proposition he is attacking conclusions which contradict it. According to his own physical theory, every magnitude is continuous (*Phys.* IV. 11, 219 a 11 πᾶν μέγεθος συνεχές, VI. 2, 233 a 11 μέγεθος ἅπαν ἐστὶ συνεχές) and potentially capable of subdivision into magnitudes which are continuous, *Μεταφρ.* 1020 a 10 λέγεται δὲ πλῆθος μὲν τὸ διαμετρὸν δυνάμει εἰς μὴ συνεχῆ, μέγεθος δὲ τὸ εἰς συνεχῆ: its unity is due to this continuity. Herein it differs from discrete quantity or number, which derives such continuity as it has from succession. Philop. (126, 3) makes A. say: 'So far from allowing νοῦς to be continuous, I should with better reason affirm it to be discontinuous (διωρισμένος). If it could be said to be continuous at all, it will be so in the same sense as discrete quantity or number, since the different numbers follow in a definite order of succession which allows nothing else to come between them.' The proof for νοῦς anticipates the doctrine of III., cc. 4—8. Νοῦς is taken to be ὁ κατ' ἐνέργειαν in contradistinction to potential νοῦς: Philop. 126, 21 ἐνέργεια δὲ τοῦ νοῦ ἡ νόησις, ἡ δὲ νόησις οὐδὲν ἄλλο ἐστὶν ἢ τὰ νοήματα, ὥσπερ καὶ ἡ κατ' ἐνέργειαν αἴσθησις τὰ αἰσθήματα. To the same effect Them. 20, 27 H., 37, 18 Sp. μέγεθος μὲν γὰρ ἅπαν συνεχές, καὶ οὕτως ἐν τῷ συνεχὲς εἶναι καὶ τῷ συνάπτειν αὐτοῦ πρὸς τινα κοινὸν ὅρον τὰ μόρια· ὁ δὲ νοῦς εἰς καὶ συνεχὴς κατ' ἄλλον τρόπον, εἰ δὲ τὸ συνεχὲς ὅλος ἐπ' αὐτοῦ λέγεται. The identity of νοῦς in actuality with νόησις follows from the statement (429 a 24, b 31) that νοῦς is nothing in actuality prior to thinking.

a 7. ἡ δὲ νόησις τὰ νοήματα. The process of actual thinking, the ἐνέργεια of νοῦς, finds expression in νοήματα, each of which is a single notion or conception, either as the thought of something indivisible or as the unity of two indivisibles in a judgment, whether affirmative or negative. This is further developed and explained in III., c. 6. Cf. III. 8, 432 a 8—14.

a 8. ταῦτα δὲ...ὡς τὸ μέγεθος. The Greek commentators dwell more particularly on ratiocination: e.g. Them. 20, 34 H., 37, 27 Sp. ἦσαν γὰρ τότε μετὰ τότε

νοῶμεν, διωρισμένα μὲν τὰ νοήματα, τὸ δὲ ἐφεξῆς ἀλλήλοις ἔχει, καὶ τελευτᾷ εἰς ἓν πολλάκις τὰ πλείω, ὥσπερ ἐν τοῖς συλλογισμοῖς τὰ λήμματα εἰς τὸ συμπέρασμα, ἀλλ' οὐ τῷ συνεχῇ εἶναι, οὐδὲ τῷ πρὸς ὅρον κοινὸν συνάπτειν. To the same effect Philop. 126, 24—29 and Simpl. 42, 13—33. The train of thoughts passes from one discrete item to another; what continuity it has is due to the succession. M. Rodier seeks to show that the same holds with single notions: the parts of the definition are subordinate, not coordinate; hence the suppression of one may involve the suppression of the others but not *vice versa*, which also has a parallel in the numerical series. In support of this he cites *Metaph.* 1035 b 4—7, *Categ.* 13, 15 a 4 sq., 12, 14 a 31 sq. On the relative priority of One in the numerical series see also *Metaph.* 1084 b 13—16. Trend. 209 *Νοήματα*, i.e. quae mens excogitavit, unum sunt, quoniam partes lege quadam sese excipiunt (τῷ ἐφεξῆς), nulla tam spatii continuitate cohaerentes; sunt igitur, quemadmodum numerus, cuius partes nec extra se positae neque externo vinculo connexae, sed sola cogitationis vi ad unitatem quandam redactae. Itaque mens aut partium ignara est aut certe non tanquam magnitudo continua. Continuity (and therefore Unity) of succession is a kind of bastard unity, κατὰ τὴν ἀναλογίαν συνεχῆς as Philop. 127, 2 calls it. The problem thus raised involves the question, Does mind always think? on which see 430 a 5 sq., 430 a 22.

a 9 διόπερ... 10 ὡς μέγεθος τι συνεχῆς. The first opinion, as will appear from 430 b 15, is A.'s own. This is the negation of μέγεθος ἔχειν *Metaph.* 1073 a 5 δέδεικται δὲ καὶ οἱ μέγεθος οὐδὲν ἔχειν ἐνδέχεται ταύτην τὴν οὐσίαν [viz. αἰδῖος οὐσία which is the prime movent and the Deity], ἀλλ' ἀμερῆς καὶ ἀδιαίρετος ἐστίν. If νοῦς be ἀμερῆς, by another of A.'s physical principles, it is incapable of motion, *Phys.* VIII. 10. 240 b 30 οὐκ ἐνδέχεται τὸ ἀμερῆς κινεῖσθαι οὐδ' ὅλως μεταβάλλειν.

a 10 πῶς γὰρ δὴ... 22 [νόησις]. A new objection. How will Mind think, if it be extended? The context shows that what A. means is: "Granting that the movement (κίνησις) of mind is thought, and the movement of a circle revolution, what analogy is there between the two to justify Plato in using the one to represent the other?" Themistius (21, 4 H., 38, 10 Sp.) in his paraphrase supplies a necessary premiss: "How will Mind think, especially if soul and mind need contact or contiguity with the object of thought?" εἰ... ἀφῆς χρεία τῇ ψυχῇ καὶ τῷ νῷ καὶ πείλασεως πρὸς τὸ νοοῦμενον. Hence θιγῶν had better be supplied with δαφροῦν μορίῳ (407 a 11) and ἰθ. κατὰ μέγεθος. The evidence for πότερον is the unsupported first hand of E, except that vet. transl. and Soph. (21, 7; 22, 23) point to πότερον καθ' ὅλον ἢ which Torstrik accepted, inserting θιγῶν in the text before ἦ. I prefer to understand θιγῶν rather than to insert it. Three alternative hypotheses present themselves; or rather two, one of which is subdivided; that is to say (1) that soul thinks by means of its parts severally, whether these parts be (a) magnitudes or (b) points, a 11—17, or (2) that soul as a whole apprehends its object as a whole, a 17 sq. Difficulties confront us on either hypothesis. Taking (1 b) first, point after point of the circle as it revolves comes into contact with the object, and as there is an infinity of such points, it will take an infinite time for mind to apprehend its object. On the other hand, on assumption (1 a) if an extended part (μέγεθος) of the circle comes in contact with the object, the process of thinking will involve a constant repetition in which the same object is thought again and again: which is contrary to experience. Again, if contact by means of a single part is sufficient, the supposed revolutions of the circle and the circle itself as merely extended become superfluous. On hypothesis (2) i.e. if the whole circle is required in order to apprehend anything in thought, what part is played by the point by point contact? There is a further difficulty on either hypothesis, viz. that the procedure is the same whether the object of

thought be divisible or indivisible. On hypothesis (1) how can what is indivisible be apprehended by what is divisible? On hypothesis (2) how can what is divisible be apprehended by what is indivisible?

a 12. εἰ δὲ καὶ τοῦτο μόνον εἰπεῖν. Τοῦτο = τὴν στιγμήν: attracted to the gender of μόνον. This assumption A. would not himself concede: *Phys.* vi. 6, 237 b 7 αἴτιον δὲ τούτου τὸ μὴ εἶναι ἀμερὲς ἀμεροῦς ἔχοντα, *De Gen. et Corr.* i. 2, 317 a 10 sq. οὐ γὰρ ἔστιν ἔχοντα σημεῖον σημείου ἢ στιγμήν στιγμής, *De Cael.* ii. 13. 296 a 16 οὐθέν γάρ στιγμή τῶν σωμάτων ἐστίν. According to A. the line is potentially, not actually, divisible into points: the point or "unit having position" is not the constituent element out of which even the line is compounded (*σύγκειται*, *Phys.* iv. 8, 215 b 19), much less is it any real part of bodies. In every line there are an infinite number of points *δυνάμει μὲν, ἐντελεχεία δ' οὐ*. εἰ μὲν οὖν κατὰ στιγμήν. Supply *θιγὼν νοήσει* (or *θίξεται*) as above, and similarly below (a 14) with *εἰ δὲ κατὰ μέγεθος*.

a 14. πολλάκις...νοήσει τὸ αὐτό. This follows from A.'s doctrine that extended magnitude is divisible into a finite or infinite number of parts, each itself a magnitude. The contact with successive parts, which *ex hypothesi* is thinking, will not be a single instantaneous act, the cogitant subject will travel over the parts of the extended object, and this will take time. If the extended object is infinitely divisible, it may take infinite time over thinking that one thing. Cf. *Simpl.* 43, 31 διαίρειν γὰρ ἀνάγκη, ἐπειδὴ καὶ μέγεθος καὶ κινούμενον ὑπόκειται νοεῖν. τί οὖν ἄπορον; ὅτι πολλάκις ἢ ἀπειράκις νοήσει τὸ αὐτό. πολλάκις μὲν, εἰ ὀρίσιμα τὰ μεγέθη, εἰς δ' ἢ διαίσεις εἴη, ἀπειράκις δὲ, εἰ ὀρίστα, τῷ αἰεὶ τὸ δεύτερον τοῦ πρὸ ἑαυτοῦ ἡμῖν φέρε ἢ τρίτον λαμβάνεσθαι. ἀνάγκη οὖν, εἰ μέλλοι τῷ ὅλῳ ἢ τοῦ προκειμένου γνώσις ἐγγίνεσθαι, πολλάκις ἢ ἀπειράκις, καὶ διὰ τὸ μηδέποτε διεξιέναι ἀδύνατον· τὸ δὲ πολλάκις καὶ αὐτὸ ἄπορον.

a 15. ἐνδεχόμενον, int. νοήσει, in a single instantaneous act of thought, according to A., ἅμα νοεῖ καὶ νενόηκε.

a 18. τίς ἐστιν ἡ τοῖς μορίοις θέξις; What does the contact with the parts mean? What is its rôle, its *raison d'être*? For other instances of a criticism conveyed by interrogation cf. *De Sensu* 2, 437 b 15 τίς γὰρ ἀπόσβεσις φωτός ἐστιν; 438 a 29 τὸ τε γὰρ συμφύεσθαι τί ἐστι φῶς πρὸς φῶς; *Metaph.* 991 a 22. The interrogation implies that little or nothing can be made of the explanation provided. The *ἀπορία* of *Metaph.* 1075 a 5—7 is not quite the same.

a 19 ἀναγκαῖον...22 περιφορά [νόησις]. A. is aware that his objection may be met by drawing a distinction between the soul and the circle in the *Timaeus*. It might be said that the circle is the matter or the necessary condition and instrument of the soul. The argument is put clearly and succinctly by *Simplicius*, "How, then, does he infer that mind is this circle? By arguing from the following premiss: Things which have their operations identical also have identical natures or essences," *Simpl.* 46, 11 ὃν αἱ ἐνέργειαι αἱ αὐταί, τούτων καὶ αἱ οὐσίαι. The operation of νοῦς is νόησις, the operation of the circle is its revolution. Now the revolution of the circle is declared to be thinking (νόησις), and, things whose operation is one and the same being themselves one and the same, mind and the circle are identical. A. proceeds (a 21 εἰ οὖν ἡ νόησις περιφορά), "If then we equate the revolution of the circle with thinking": the implication being that we are justified by the *Timaeus* in doing so. Cf. *Tim.* 37 A—C αὕτη τε ἀνακυκλούμενη πρὸς αὐτήν...λέγει κινουμένη διὰ πάσης ἑαυτῆς κτέ., and this declaration of soul (λόγος) consists of true beliefs, true opinions, knowledge and reason (νοῦς). Cf. 36 E αὕτη ἐν αὐτῇ στρεφόμενη, θείαν ἀρχὴν ἥρξαστο ἀπαύστου καὶ ἔμφρονος βίου, 47 B ἵνα τὰς ἐν οὐρανῷ τοῦ νοῦ κατιδόντες περιόδους χρῆσαιμεθα ἐπὶ τὰς περιφοράς τὰς τῆς παρ' ἡμῖν διανοήσεως, ξυγγενεῖς ἐκείναις οὐσας.

Torstrik (p. 121) bracketed *νόησις* with the following comment:—*Ut ostenderet hunc Platonis orbem (τὸν κύκλον τοῦτον) esse mentem, id quod diserte Platonis nusquam dicit (cp. a 3—5), Aristoteles hanc ponit proportionem:*

*κύκλος : περιφορά = νοῦς : νόησις.*

Quodsi ἡ *νόησις* est *περιφορά τις*, sequitur ut ὁ *νοῦς* sit *κύκλος τις*. Qualis vero orbis? nimirum cuius motio talis, ἡ *τοιαύτη*, hoc est *νόησις*, est. There is no trace of *νόησις* in the ancient commentators. It may be a marginal gloss upon ἡ *τοιαύτη περιφορά*. Its retention in the text favours the incorrect interpretation "the circle of which the revolution described is thought," but such an interpretation misrepresents the argument.

a 20. τὸν κύκλον τοῦτον, i.e. the circle which has been described in the *ψυχογονία*: see Torstrik as cited in the last note. So Simplicius. It seems very doubtful whether *οὗτος* is ever used, as some have supposed, like *οὗδε*, technically to distinguish a sensible or particular thing from an idea, cf. *σιμφρ.* (note on 403a 14). It has been suggested that in the present case it is used deictically, that is to say, A. may have had a diagram before him.

a 22 αἰεὶ δὲ δὴ τι...31 πεπερασμένον. (Objection 3.) The identity of thinking mind and the revolving circle having been established, it follows that thought, like this revolution, is an endless process. But it can be shown that both theoretical and practical thinking, as we know them, have limits, i.e. come to an end.

a 22. αἰεὶ δὲ δὴ τι νοήσῃ, Bekker and Trend. edited δὴ τι (indefinite pronoun), Torstrik restored the interrogative τί, appealing to the sense of the passage and to Philop. and Simpl. (Torst. p. 121) Interrogationem esse et ipsa sententia ostendit et Simplicius Philoponusque: quorum ille [46, 25] ἐρωτᾷ οὖν, τί αἰεὶ νοήσῃ; hic [133, 6 sq.] τί οὖν τοῦτό ἐστιν; and this would agree with the form of the preceding objections [407 a 10] πῶς γὰρ δὴ καὶ νοήσῃ, a 16 τί αἰεὶ κύκλῳ κτέ., a 18 ἔτι δὲ πῶς. But the position of αἰεὶ and the subsequent argument show that the point now raised is whether thought is finite or infinite. We return to the object of thought at 407 a 31, 2. The question whether we should read τί or τι can hardly be settled by authority. All our MSS., with Sophonias, take τι indefinitely; from the nature of the case, this is only the expression of an individual opinion by copyist or commentator. Philoponus (132, 26 sqq., 28; 133, 1) interprets τι indefinite. It is true that he continues (133, 3) μήποτε οὖν τοῦτό φησι ὅτι τὸ αὐτὸ αἰεὶ νοήσῃ τῷ μηδέποτε ὅλον νενοημέναι· ἡ γὰρ ὁμοία καὶ ὁσαύτως ἔχουσα περιφορά περὶ ταύτου τινος ἔσται. δεήσει οὖν τοιοῦτον εἶναι τὸ νοούμενον, ὃ οὐδέποτε νενοημένον ἔσται. τί οὖν τοῦτό ἐστιν; ὅτι δὲ οὐδεμία ἐστὶν ἄπειρος νόησις διὰ τῶν ἐξῆς ἐπάγει. But, though at first sight the interrogation seems to bear out Torstrik's conclusion, a careful study of the whole context convinces me that Philop. is supplying what he regards as a missing link in the argument. "Mind will always be thinking of something which is the same" is still (133, 4), as before (132, 26 sqq.), his paraphrase of αἰεὶ δὲ δὴ τι νοήσῃ; "if so, the object of thought will be something, the thinking of which will never be completed (133, 6). What, then, is this object?" [=there is no such object]. "A. goes on to prove that there is no such thing as ἄπειρος νόησις." Them. (22, 15 H., 40, 16 Sp., which will be found cited in note on 407 a 31) takes much the same line as Philop. There is a similar uncertainty in *Μεταφρ.* 989 a 28 τὴν γὰρ ἂν αὐτὰ πάσχοι τὰναντία, καὶ τίς ἂν εἴη μία φύσις ἡ γυγνομένη πῦρ καὶ ὕδωρ, where the indefinite pronouns τὴν, τίς have been restored from Asclepius by Bonitz and Christ, all previous editors having given τί and τίς. Another doubtful case is *Phys.* II. 2, 194 b 11, as we learn from Simpl. in *Phys.*, who cites Alex. Aphr. as evidence for one of the two readings.



a 23. τῶν μὲν γὰρ πρακτικῶν νοήσεων ἔστι πέρατα. Practical thinking has in every case a limit; it is bounded by the end sought, the τέλος, οὐ ἔνεκα or οὐ χάριν: 433 a 14 νοὺς δὲ ὁ ἔνεκά του λογιζόμενος καὶ ὁ πρακτικός [int. κινητικός κατὰ τόπον ἐστίν]· διαφέρει δὲ τοῦ θεωρητικοῦ τῷ τέλει, *Pol.* 1257 b 27 τῶν δὲ πρὸς τὸ τέλος οὐκ εἰς ἄπειρον, πέρασ γὰρ τὸ τέλος πάσαις. Nor can the series of means to the end be other than finite, else the end would be incapable of realisation. Such a series of steps necessary to be taken if a given result, e.g. health, is to be brought about begins with the end in view and stops at something within the agent's power: see *Metaph.* 1032 b 5—23.

a 24 αἱ δὲ θεωρητικαὶ...25 ὀρίζονται. Thinking which is not practical but speculative is delimited or determined because it consists of unspoken propositions (λόγοι), each of which is delimited or determined. Such mental discourse is either definition, which by its very nature is the determination of a concept, or deduction which proceeds from a beginning or premiss to an end or conclusion. The activity of thought is sometimes indivisible, like its object (430 a 26, *Metaph.* 1037 b 3 sq.), but the analytic or discursive function can be exercised even upon such indivisible unities, and their content can only be stated in the form of the judgment (τι κατὰ τινος) or συμπλοκή νοημάτων (430 b 26, 432 a 11), which seems to be the only logical process wide enough to embrace both definition *per genus et differentiam* and demonstration. The terms given by Bz. *Ind. Ar.* 435 a 26 "ratio, argumentum, ratiocinatio" do not properly apply to ὁρισμός. As φάσις and κατάφασις (430 b 26), so λόγος here = mental statement, i.e., predication by which something is thought or predicated of something.

a 27. τὸν συλλογισμόν ἢ τὸ συμπέρασμα. Cf. *Ind. Ar.* 717 a 38 συλλογισμός est ea ratiocinatio per quam efficitur τὸ συμπέρασμα...*Anal. Prior.* I., cc. 2—4 ubi συμπέρασμα ἀληθές ubivis ad veritatem conclusionis, non ad formam syllogismi refertur. Here the two terms συλλογισμός and συμπέρασμα approximate in meaning. εἰ δὲ μὴ περατοῦνται...28 πάλιν ἐπ' ἀρχήν, i.e. as the circle returns to its starting-point. There may be a chain of syllogisms, the conclusion of the last forming a premiss of a new syllogism. The laws of the syllogistic process as formulated by A. in *Anal. Post.* I., c. 3 exclude reasoning in a circle, as it is called, i.e. the demonstration in the course of the series of a proposition previously assumed as a premiss (except of course in the case of reciprocating propositions).

a 29. προσλαμβάνουσαι...εὐθυποροῦσιν. The subject to be supplied is αἱ ἀποδείξεις: αἰ probably means "successively" rather than "invariably": μέσον and ἄκρον are the new middle term and extreme term required whenever the demonstration is extended by a fresh syllogism. The constituent elements assumed in every syllogism are three terms and two propositions or premisses; in the major premiss of the first or normal figure A is affirmed (or denied) of all B; in the minor, B is affirmed of all C; in the conclusion A is affirmed (or denied) of all C. A and C are now extremes (ἄκρα). If the demonstration proceeds to a new syllogism by affirming (or denying) C of all D and D of all E, the new conclusion is that C is affirmed (or denied) of all E. We have thus reached a new extreme E by means of a new middle term D; and so on. *Ind. Ar.* 647 a 37 λογικῶς προσλαμβάνειν ὄρους, opp. διὰ μέσων, ἐντὸς ἐμβάλλεσθαι. *Anal. Post.* I. 12, 78 a 14 αἰσθεται δ' οὐ διὰ τῶν μέσων, ἀλλὰ τῷ προσλαμβάνειν, οἷον τὸ A τοῦ B, τοῦτο δὲ τοῦ Γ, πάλιν τοῦτο τοῦ Δ, καὶ τοῦτ' εἰς ἄπειρον. Torstrik defends προσαναλαμβάνουσαι which he introduced into the text from E as follows:—quaeritur solummodo utrum recte ex solo codice E scripserimus προσαναλαμβάνουσαι. Ac profecto omnibus Analyticorum locis quos quidem inspexerim Ar. dicit προσλ. non προσαναλ. idemque videtur in nostrorum librorum editione A scripsisse. Sed optime correxit. In ceteris enim locis, si activo

utitur, subiectum est homo demonstrans,  $\delta$  ἀποδεικνύων, si passivo, auditur ὑπὸ τοῦ ἀποδεικνύοντος: hoc nostro loco ipsae demonstrationes sunt subiectum, quae minus recte dicuntur adhibere vel adicere, προσλ., optime in se recipere vel sibi addiscere vel assumere, προσαναλαμβάνειν, quae quasi in itinere suo invenerint, novos terminos medios et extremos.

a 31. πεπερασμένοι. So *Metaph.* 1043 b 35 οὐ γὰρ ἅπτεροι οἱ λόγοι (= ὅρισμοί: cf. *ib.* b 34).

a 31 ἐτι...32 νοεῖν τὸ αὐτό. (Objection 4.) Repeated revolution implies repetition of the same object of thought. This objection seems much the same as that advanced alone in 407 a 14, see *note* on 407 a 10. Them. 22, 15 H., 40, 16 Sp. includes both this and the following argument as essential parts of argument 3. In his paraphrase, after noticing parts of argument 2, the last being 407 a 18, 19, he proceeds ἀλλὰ καὶ αἰδιος ἡ περιφορὰ, αἰδιος οὖν καὶ ἡ νόησις. ἡ τοίνυν αἰεὶ νοεῖ καὶ διὰ τοῦτο ταῦτόν αἰεὶ [object. 4], ἡ ἄλλο καὶ ἄλλο. εἰ μὲν γὰρ ταῦτόν, ἡρεμήσει μᾶλλον ἢ τοιαύτη νόησις ἔοικεν [object. 5]. εἰ δὲ ἄλλο καὶ ἄλλο...πότε συντελέσει τὴν νόησιν; [object. 3]. Cf. Philop. 135, 31—136, 1 εἰπὼν ἔπασθαι τῇ ἀπείρῳ περιφορᾷ τὴν ἅπειρον νόησιν and 132, 26—133, 7 cited *supra* a 22 *note*.

a 32 ἐτι δ' ἡ νόησις...33 κινήσει. (Objection 5.) Thoughts (like syllogisms) find their analogue in rest rather than in motion. This is, from A.'s point of view, a fundamental objection and might well have come first.

a 33. ἐπιστάσει, i.e. a halting or dwelling upon anything. So ἔχειν ἐπίστασιν *Metaph.* 1089 b 25 = to call for or deserve consideration, like ἄξιον ἐπιστάσεως *Phys.* II. 4, 196 a 36.

a 34 ἀλλὰ μὴν...407 b 1 βίαιον. Having urged that rest and not motion is the proper analogue of thought, A. proceeds to show that on this assumption the universe cannot be the "happy" being (cf. *Tim.* 34 B εὐδαίμονα θεόν) of Plato's description, seeing that its endless activity is forced and constrained. Thus regarded, this criticism is not a new objection, but an appendix to the foregoing. Philop. 136, 20 admits both possibilities: δύναται τοῦτο καὶ καθ' ἑαυτὸ εἶναι ἐπιχειρήματα καὶ συνῆφθαι τοῖς ἄνω. If it is regarded as a separate argument, he continues, 136, 30: A. having developed the inconsistencies attendant on the hypothesis κατὰ φύσιν κινεῖται ἡ ψυχὴ now turns to consider what follows εἰ μὴ κατὰ φύσιν κινεῖτο. It will then move παρὰ φύσιν and therefore βίῳ, and its motion, if βίαιος, is οὐ μακάριος. And yet the soul of the universe is required to be μακάριος. Philop. is in similar perplexity whether the succeeding argument is to be considered independent or not, and explains it on both assumptions.

407 b 1. εἰ δ' ἐστὶν ἡ κίνησις αὐτῆς μὴ οὐσία, παρὰ φύσιν ἂν κινεῖτο. αὐτῆς = τῆς ψυχῆς. The text here presents great difficulties. The position of μὴ is unusual, though perhaps not more strange than μὴ κατὰ συμβεβηκός. It is clear, however, that Them. read εἰ δ' ἐστὶν ἡ κίνησις αὐτῆς οὐσία, and his commentary (22, 36—23, 8 H., 41, 17—29 Sp.) gives the impression that he had before him a fuller text, perhaps εἰ δ' ἐστὶν ἡ κίνησις αὐτῆς <οὐσία, πῶς νόησει τὰ ἀκίνητα; εἰ δὲ> μὴ οὐσία, παρὰ φύσιν ἂν κινεῖτο. On the other hand the comments of Philop. (137, 5—15) and Simpl. (48, 9—14) imply that they had before them our present text, which, if sound, must mean that, if motion is not of its essence, its motion would be unnatural, from which would follow the inference that it would be constrained (βίαιον). The sentence would thus be a justification of the term βίαιον. Or, in Mr Shorey's words (l.c.), "if movement be *not* its essence" in loose writing may be taken as the logical equivalent to "is the negation of its essence." The doubts which will suggest themselves as to the cogency of this reasoning would seem to have been felt by the ancient commentators. Thus Simpl. feels it

necessary to deal with the obvious objection that, even if motion is not of the essence of the universe, yet it does not follow that its motion is unnatural. A. often denotes "non-existence," "non-existent" by *μη οὐσία, μη ὄν*, e.g. *Metaph.* 1087 a 1, 1089 a 14 sqq., but the proximity of *αὐτῆς*, as well as the unsatisfactory sense afforded, forbids us to take the words *μη οὐσία* together here as expressing the single idea "negation of essence."

**b 2 ἐπίπνονον δὲ...3 ἀπολυθῆναι.** (Objection 6.) The inseparable union of the soul with the body of the universe is a hardship to the former, and undesirable. Cf. *Simpl.* (48, 24—49, 17), who treats the objection very reasonably from his own Neo-Platonic standpoint. Cf. *Metaph.* 1050 b 26 sq., 1074 b 28 sq.

**b 4. εἰωθέ τε λέγεσθαι,** int. by the Platonists: cf. *Metaph.* 1033 b 27, also 991 a 20 τῶν εἰωθότων λέγεσθαι, where Alex. Aphr. in *Metaph.* (100, 25—27 H.) gives this as an explanation of the phrase "as some understood it," *ὥς τινες ἤκουσαν*, though apparently not favouring it himself. Here the case is clear, for the many who approve are obviously distinct from those who make the statement, 407 b 28. Torst. (p. 112): Nam *τέ—καί* a simplici *καί* ita differt ut simplex *καί* iubeat cogitari res coniunctas tanquam coniunctas, *τέ—καί* res coniunctas quidem iubeat cogitari, sed quatenus distinctae sint.

**b 5 ἄδηλος δὲ καὶ...6 ἡ αἰτία.** No clear cause is assigned for the circular motion of the universe. It does not lie in the nature of the soul of the universe: nor again in that of its body, which is rather moved than movent. Nor is it stated, as might have been expected, in the *Timaeus*, that there is a final cause for this circular motion.

**b 7. ἀλλὰ κατὰ συμβεβηκὸς οὕτω κινεῖται.** According to Themistius, circular movement is incidental to the soul because it was imposed upon it by the Demiurgus: 23, 14 H., 42, 9 Sp. εἰ γὰρ δεῖ προσέχειν τοῖς γεγραμμένοις, οὐκ ἔστι τῆς ψυχῆς ἡ οὐσία κυκλοφορία ἀλλ' ἐκ τῆς εὐθυρίας εἰς κύκλον ὕστερον κατεκάμφθη, and this he says is to make the soul of the universe move for the sake of its body, citing 406 b 30. But Trend. rightly refuses to regard the motion thus communicated to the soul as accidental: est enim motus, qui animae ipsi inditur, licet non habeat ab initio. Nothing remains, then, but to consider the statement, with Philop. and *Simpl.*, as made by A. from the standpoint of his own system. *Simpl.* 49, 19 ἐλεγχθείσης τῆς τοιαύτης ὑποθέσεως τῆς ὅτι τῷ κύκλῳ κινεῖσθαι ἡ ψυχὴ αἰτία τῆς τοῦ οὐρανοῦ κυκλοφορίας: and (commenting on 407 b 6, 7) 21 ὥς οἱ κίνησιν τὴν οὐσίαν οἰόμενοι καὶ κατ' οὐσίαν κυκλοφορεῖσθαι βουλόμενοι καὶ οὕτω κινεῖν· μήτε γὰρ κύκλῳ μήτε κινεῖσθαι ὁλως τὴν ψυχὴν. τῷ οὖν κινεῖσθαι οὐκ ἔσται αἰτία· οὐ γὰρ καθ' αὐτὴν ἀλλὰ κατὰ συμβεβηκὸς κινεῖται (sc. ἡ ψυχὴ). Philop. 138, 13 ὥς δείξας ὅτι ἡ ψυχὴ οὐ κινεῖται καθ' ἑαυτὴν ἀμεγέθης ὁσα καὶ ἀσώματος, ἀλλὰ κατὰ συμβεβηκός, λέγει εἰκότως ὅτι ἄδηλος ἐπὶ τοῖς ὑπ' αὐτῶν λεγομένοις ἡ ποιητικὴ αἰτία τῆς κύκλῳ κινήσεως τοῦ οὐρανοῦ (cf. 406 a 16 sqq., b 5 sqq.).

**b 9 καίτοι γ' ἔχρην...11 ἄλλως,** i.e. in order to insure consistency with the teleological principle enunciated by the Platonic *Timaeus* at the outset of his cosmology: *Tim.* 29 E sqq. Cf. especially 30 A βουλευθείς γὰρ ὁ θεὸς ἀγαθὰ μὲν πάντα, φλαῦρον δὲ μηδὲν εἶναι κατὰ δύναμιν. This criticism echoes that passed upon Anaxagoras by Plato in the *Phaedo* (97 D sqq.) and by A. himself, *Metaph.* 985 a 17—21.

**b 13. ἐκεῖνο δὲ ἄτοπον συμβαίνει.** Objection 8. Plato's theory of soul, says A., like most others, ignores the intimate relation existing between soul and body. This relation A. now takes occasion to explain somewhat in detail: the positive statements of doctrine here implied are specially important as leading up to the theory of soul as the form of body (407 b 23 εἶδος καὶ μορφή) laid down in Book II. cc. 1, 2.

b 15 οὐθέν...16 τοῦ σώματος, i.e. they do not go on to explain the reason why a given soul is found in a given body, or what the bodily conditions are which render the presence of this particular variety of soul possible, e.g. nutritive, sensitive or rational. Them. (23, 25 H., 42, 25 Sp.) adds καὶ τίνα συγγένειαν κεκτημένου πρὸς αὐτήν [int. τοῦ σώματος].

b 19. τούτων δ' οὐθέν...τοῖς τυχοῦσιν. Neither the relation expressed by ποιεῖν and πάσχειν nor that expressed by κινεῖν and κινεῖσθαι holds of all things indiscriminately. Cf. *De Gen. et Corr.* I. 7, 323 b 29 ἀλλ' ἐπεὶ οὐ τὸ τυχόν πέφυκε πάσχειν καὶ ποιεῖν, ἀλλ' ὅσα ἢ ἐναντία ἐστὶν ἢ ἐναντίωσιν ἔχει, ἀνάγκη καὶ τὸ ποιοῦν καὶ τὸ πάσχον τῷ γένει μὲν ὅμοιον εἶναι καὶ ταῦτό, τῷ δ' εἶδει ἀνόμοιον καὶ ἐναντίον. This conclusion receives further qualification in the course of *De Gen. et Corr.* I., c. 7 in consequence of the double meaning of τὸ πάσχον as (1) τὸ ὑποκείμενον, (2) τὸ ἐναντίον, and again of τὸ ποιοῦν as (1) the agent, e.g. the physician, (2) the instrument, e.g. wine: 324 a 15—30. Compare further 324 a 30—b 3, where the parallel between ποιήσις and κίνησις is developed, leading to the conclusion that, as τὸ πρῶτον κινεῖν is ἀκίνητον, so τὸ πρῶτον ποιοῦν is ἀπαθές: and further 324 b 3—18. By τὰ τυχόντα are meant "things which happen to meet one," or, as English idiom prefers, "which we happen to meet": here "things taken at random," which mere chance brings together.

b 20. οἱ δὲ...ἡ ψυχῇ. Grammatically, the subject understood with οἱ is λόγοι b 14—15, but the authors of the theories virtually replace the theories themselves. Cf. below b 24 ὥσπερ εἴ τις φαίη.

b 20 περὶ δὲ...21 προσδιορίζουσιν. The censure is repeated 414 a 22—25.

b 21 ὥσπερ ἐνδεχόμενον...23 σῶμα. The doctrine of metempsychosis was commonly held by the Pythagoreans. The well-known verses of Xenophanes apud Diog. Laert. VIII. 36 [*frag.* 7 D, 18 K] put the doctrine into the mouth of Pythagoras himself. Herodotus II. 123 states the Egyptian belief in similar terms, ὡς ἀνθρώπου ψυχὴ ἀθάνατος ἐστὶ, τοῦ σώματος δὲ καταφθίνοντος ἐς ἄλλο ζῶον αἰεὶ γινόμενον ἐσδύεται, and among the Greeks, who according to him derived this doctrine from the Egyptians, Herodotus no doubt included Pythagoras. Philop. 140, 5 μυθῶδῃ φησὶ καὶ οὐκ ἄξια λόγου τὰ ὑπ' αὐτῶν (int. τῶν Πυθαγορείων) λεγόμενα, citing Empedocles [*frag.* 117 D, 380 sq. K]. Them., probably on his own conjecture, gives a different turn to μύθους: 23, 33 H., 43, 6 sq. Sp. οἷς ἐκείνος μὲν ἐχρήτο πολιτικῶς, οὗτοι δὲ φυσικῶς [ὑπολαμβάνουσιν] κτέ.

b 23. δοκεῖ γὰρ ἕκαστον ἴδιον ἔχειν εἶδος καὶ μορφήν. The γὰρ must go back to b 19 τούτων δὲ...τοῖς τυχοῦσιν. By ἕκαστον I understand σῶμα ἑμψυχον (the qualification is required by 412 a 16 sq., b 25 sq.), which is the same as ζῶον. That which acts upon body is not τῶν τυχόντων τι, for there is a proper correlative to ἕκαστον, i.e. to each species of animal, and again in any given species (as man) to each individual. This correlative is then introduced as εἶδος καὶ μορφή. The καὶ is explanatory, both terms being used to express A.'s formal cause. Cf. 412 a 5 sqq., b 10 sqq.

b 25. τὴν τεκτονικὴν. Int. τέχνην. ἐνδύεσθαι. A word not very appropriate to the relation between the art and the instruments which it employs (b 26), e.g. between αὐλητικὴ and αὐλοί. A. simply takes it over from the Pythagoreans, b 23.

b 25 δὲ γὰρ...26 τῷ σώματι. The soul is compared to the art or handicraft, the body to the tools or instruments which such an art employs as means to an end (*De Part. An.* I. 5, 645 b 14 τὸ ὄργανον πάντων ἐνεκά του), the end being some work or function: the saw is for sawing, the axe for cutting. If the work is to be performed well or even at all, the tool or instrument must be adapted to its end: *De Part. An.* I. 1, 642 a 9 sqq. The implements special to one craft would be useless to another which has a different work to perform. The carpenter could

not employ flutes in place of his saw and plane. A. applied this analogy unreservedly, as the treatise *De Part. An.* testifies. As the whole body is an instrument, so every part of it is a means to a particular function, *ib.* I. 1, 642 a 11 ἐπεὶ τὸ σῶμα ὄργανον (ἐνεκά τινος γὰρ ἑκάστον τῶν μορίων, ὁμοίως δὲ καὶ τὸ ὅλον), ἀνάγκη ἄρα τοιωνδί εἶναι καὶ ἐκ τοιωνδί, εἰ ἐκεῖνο ἔσται. In order to fulfil its functions the soul needs a body of a given kind which (*De A.* 412 a 28) is termed ὀργανικόν (=fitted with organs). The analogy is imperfect (as is acknowledged when A. afterwards illustrates the soul by the axeity of the axe, 412 b 11 sqq.), for the tools are separate from the craftsmen who use them, the possessors of the craft, whereas soul and body combine in a single ἔμψυχον ζῶον, and in the animal (nay even in the plant) the body, that is the corporeal part of the compound, is merely an instrument at the disposal of the soul, which is both form and end (415 b 18—20). Neither the whole animal nor any part can be properly defined unless we take account of its function: and this implies that every part, as well as the whole, of the body is instinct with soul (ἔμψυχον). *Μεταφ.* 1035 b 16 ἑκάστον γοῦν τὸ μέρος ἐὰν ὀρίζηται καλῶς, οὐκ ἄνευ τοῦ ἔργου ὀριεῖται, ὃ οὐχ ὑπάρχει ἄνευ αἰσθήσεως ...b 23 οὐδὲ γὰρ εἶναι δύναται χωριζόμενα [int. τὰ μόρια τοῦ σώματος]· οὐδὲ γὰρ ὁ πάντως ἔχων δάκτυλος ζῶον, ἀλλ' ὁμώνυμος ὁ τεθνεώς. See also 1036 b 28—32.

## CHAPTER IV.

This chapter is mainly devoted to the consideration of two psychological doctrines. The one is that the soul is a harmony (407 b 27—408 a 28). For this part of the chapter the article of Bonitz, *Hermes* VII. pp. 428—36, should be consulted. The other theory is that soul is a self-moving number (408 b 30—409 a 30), the criticism of which runs on into the fifth chapter. The present arrangement of chapters is somewhat disturbing: A. himself clearly indicates a halt at 408 a 29 and again at 409 b 19.

Between the criticisms of these two theories are interposed some valuable remarks, starting from an attempt to limit still further the attribution of motion to the soul (408 a 29—b 29).

Upon the doctrine that soul is a harmony A. does not waste much time: it has already been refuted in Plato's *Phaedo* and his own *Eudemus*. Nevertheless of all the pre-Platonic speculations it is the one which approaches most nearly to his own formula that soul is form (εἶδος, i.e. πρώτη ἐντελέχεια) of a natural body capable of life. How nearly the two approximate may be seen from the fact that A. uses the same terms, viz., λόγος and σύνθεσις, to explain his own formal cause and this harmony or mixture of contrary elements put forth by his predecessors. For σύνθεσις, see *Phys.* II. 3, 195 a 20 τὰ δὲ [int. αἴτια or γένε τῶν αἰτίων] ὡς τὸ τί ἦν εἶναι, τό τε ὅλον καὶ ἡ σύνθεσις καὶ τὸ εἶδος: and for λόγος=εἶδος *De A.* 403 b 2, *note*. Hence it needs special care to dis-criminate a doctrine which seems at first sight to bear more than a superficial resemblance to his own, especially as the examination of it ends with a virtual admission (408 a 24—28) that to reject it altogether leaves us confronted with formidable difficulties. Cf. Alex. Aphr. *De Anima* 26, 22 καθ' οὓς μὲν γὰρ αὐτὰ τὰ συγκείμενά πως ἐστὶν ἡ ψυχὴ [the Stoics and Epicurus], κατὰ τούτους παρὰ τῆς ποιᾶς συνθέσεως τὸ ψυχὴ εἶναι τῷ συγκείμενῳ. ἥτις σύνθεσις εἰ ἐστὶν ἁρμονία, παρὰ τῆς ἁρμονίας ἂν τὸ ψυχὴ εἶναι ἔχοι τὸ συγκείμενον. καθ' ὃν δὲ ἐστὶν ἡ ψυχὴ οὐχ ἀπλῶς τὰ συγκείμενα, ἀλλ' ἐπὶ τῇ ποιᾷ τῶν πρώτων σωμάτων κράσει τε καὶ μίξε δυνάμει γεννωμένη, ἡ μὲν κράσις ὕλης ἔξει λόγον κτέ.

It is obvious that A. is pursuing the same method as in his earlier criticisms (see p. 240 *supra*). When criticising the theory of Xenocrates that soul is a self-moving number, he assumes his own doctrine of κίνησις as laid down in the *Physics*, and by its aid deduces consequences from the thesis under examination, which are either impossible or inconsistent. Cf. *Simpl.* 62, 11 δ δὲ Ἀριστοτέλης ἀριθμὸν τε τὸ μεριστὸν ἀκούων πλήθος καὶ κίνησιν τὴν κατὰ συνέχειαν προϊούσαν, ἀναγκαιῶς ἀμφω τῆς ψυχῆς ἀποφάσκει. Similarly in the discussion of harmony he assumes his own doctrine of the relation of compound bodies, σύνθετα, to the elements or simple bodies, στοιχεῖα, ἀπλὰ σώματα, out of which they are compounded; a doctrine laid down in *De Gen. et Corr.* 1., c. 10 and elsewhere. He distinguishes in the main two modes of composition (1) θέσις, σύνθεσις, παράθεσις, in which particles of the constituents are found side by side in the compound with their nature unchanged, as when sand is mixed with sugar. The particles may be so fine as to elude the senses and the compound may present to sense an uniformity and homogeneity which does not really belong to it. The case is different with (2) μείξις or κράσις, in which the constituents are mingled and blended, so that some or all of them have undergone a change in the process of mixing, *De Gen. et Corr.* 1. 10, 328 b 22 ἡ δὲ μίξις τῶν μικτῶν ἀλλοιωθέντων ἑνωσις. The qualities of the compound are often different from those presented by the original constituents and, when complete or total mixture has been effected, they belong to every minutest particle of the new compound, which is thus ὁμοιομερές; whereas, when sand and sugar are mixed, every separate particle of the sand and of the sugar retains its original qualities. Probably the term κράσις should strictly be confined to the case where all the components are liquids. The simplest case of μείξις proper is found when a solid, salt or sugar, is dissolved in a liquid. But, if the fusion of metals be μείξις, it is clear that bodies ordinarily accounted solid can be constituents of such a mixture. This, however, is an accommodation to popular language and notions: the primary components of every mixture are the simple bodies (fire, air, earth, water), or rather the primary qualities hot, cold, moist, dry. In our world μεικτὰ properly so called, especially the constituents of animal bodies (411 a 10: cf. 429 b 15 sq.), are compounds into which all these four primary qualities enter; they have been well called "quaternary compounds." This fact (as A. assumed it to be) facilitates their definition: we have only to determine the proportions in which the simple bodies or the primary qualities combine, and we have to our hand a formula which defines with quantitative exactness the nature of the compound (see note on 408 a 14). Such a formula is λόγος τῆς μείξεως, λόγος meaning ratio or combining proportion. Even συμφωνία, a consonance or chord of two or more sounds, can be similarly determined by a quantitative formula (426 a 28 sq.). It will thus be seen that the true mixture is μείξις or κράσις: in σύνθεσις we have something which simulates mixture, and how loosely the term can be used is evident from 408 a 5 sqq. It would almost seem as if any arrangement of parts, which preserve their identity when combined in a natural or artificial whole, could be called σύνθεσις, as we speak of a synthesis of parts. Hence σύνθεσις never results in a really uniform or homogeneous compound, by which is meant one, every minutest particle of which has the essential qualities which characterise the whole compound, in the sense in which every particle of flesh and bone is homogeneous with every other particle and with the whole, or every particle of water in which salt or sugar has been thoroughly dissolved is salt or sweet. See further Alex. Aphr. περὶ κράσεως καὶ αὐξήσεως (*Scripta Minora*, II. p. 213 sqq., ed. Bruns), Zabarella, *De Misione* (pp. 451—480 in the Frankfort reprint of 1617 under the title *De Rebus Naturalibus Libri XXX.*), and Mr H. H. Joachim in *Journal of Phil.* XXIX., p. 72 sqq.

407 b 27. πιθανή μὲν πολλοῖς, as e.g. to Simmias in the *Phaedo*, where, renouncing the doctrine, he says (92 C) ὅδε μὲν γάρ μοι γέγονεν (sc. ὁ λόγος) ἀνευ ἀποδείξεως μετὰ εἰκότος τινὸς καὶ εὐπρεπείας, ὅθεν καὶ τοῖς πολλοῖς δοκεῖ ἀνθρώποις. Cf. 407 b 5 πολλοῖς συνδοκεῖ.

b 28. [λόγους δ']... <δε> δεδωκυῖα. I have adopted with some misgiving the conjecture of Bernays, who has submitted the passage to a searching examination, *Die Dialoge des Arist.*, p. 14 sqq. As he points out, there is no variation in the stereotyped phrase λόγον (not λόγους) διδόναι to render an account, and if εὐθύνας be substituted for λόγον we obtain a phrase technically applicable to the magistrate submitting his accounts to audit, but so nearly equivalent in meaning that there is no place for the apologetic ὥσπερ. Besides, the antithesis to πιθανή μὲν...λεγομένων certainly demands that the clause with δὲ should intimate an unfavourable reception of the theory, which is not implied in λόγον διδόναι, but often attaches to εὐθύνας (as to the more general δίκας) διδόναι. Cf. Aristoph. *Pax* 1187 ὦν ἔτ' εὐθύνας ἐμοὶ δώσουσιν, Ar. *Rhet.* 1411 b 19 καὶ αἱ πόλεις τῷ ψόγῳ τῶν ἀνθρώπων μεγάλας εὐθύνας διδῶσιν, "pay a heavy reckoning" [or a grievous penalty] to (or by) the censure of mankind. See Cope *ad loc.* Vol. III., p. 124. A. himself appends to this citation of his unknown authority a remark of his own, viz., ἡ γὰρ εὐθυνα βλάβη τις δικαία ἐστίν, which leaves no doubt as to the sense of εὐθύνας either in the *Rhetoric* or here in the *De A.* The very same metaphor, even to the personification of the λόγοι in the dative, is repeated, Bernays thinks, in the passage before us. In conjunction with such a metaphor λόγον διδόναι would be just as much out of place as the unidiomatic λόγους διδόναι. The only defence I have seen suggested for the latter is that of Wallace: "the grammatical perversity of the plural may be explained as attracted into the number of the following word." A copyist with λόγον before him might thus assimilate it to εὐθύνας, but this is no reason why A. should have done so. An editor convinced of the strength of the case which Bernays presents may still hesitate between his solution and that of Bergk (*Hermes* XVIII. 518) λόγον δ' ὥσπερ καὶ εὐθύνας δ. This setting of the phrase has the advantage that the metaphor dispenses with ὥσπερ precisely as it does in the *Rhetoric* l.c., while ὥσπερ καὶ expresses very naturally that not only has the theory been put on its trial, but also that, instead of being acquitted, it has been condemned. If, on the other hand, we suppose λόγους to be a gloss on εὐθύνας it is a little curious that in the sixth century such a gloss should have been current and have been read by Philoponus (145, 19 sq.). Them., however, gives no hint of having read λόγους: (24, 14 H., 44, 4 Sp.) δεδωκυῖα δὲ εὐθύνας καὶ ἐξητασμένη καὶ ἐν τοῖς κοινοῖς λόγοις καὶ ἐν τοῖς ἰδίοις. The last four words show how he took the καὶ before τοῖς ἐν κοινῷ.

b 29. τοῖς ἐν κοινῷ γινόμενοις λόγοις. The dative denotes the court of auditors to whom the account is rendered (cf. *Theaet.* 183 D ὅπως τῶν ἐπιλοίπων Σωκράτει δώσεις λόγον): the court in this case being "discussions which go on in public," i.e. the dialectical debates of the time, the game so popular in Athens in the 4th century, for which A. has laid down rules in his *Topica*. The *Phaedo* and the *Eudemus*, which must be taken to be included in the reference, merely profess to report such conversations going on in public.

407 b 32—408 a 28. Here begins A.'s criticism of the theory. Harmony (ἀρμονία) may mean two totally different things:—

- (a) the *proportion* (λόγος) in which ingredients are blended,
- (b) the *combination* (σύνθεσις) or exact adjustment of different parts.

(1) Soul cannot possibly be either.

(2) Nor can harmony account for the motive power of soul.

(3) Harmony is a more appropriate expression for health or some other corporeal excellence, than for soul.

(4) It is futile to attempt to derive from this definition the active or passive functions of soul. They cannot be adjusted to a harmony of any kind.

(5) Of the two meanings of harmony the one, viz., exact adjustment of different parts, can be easily refuted. If we define the soul by harmony in that sense, we cannot point to any harmony of bodily parts which must be either intellect or sensation or appetite; while, if we take the other meaning, the combining ratio of bodily parts, we find many such and there will be a plurality of souls all over the body [§§ 1—6]. This suggests difficulties in the theory of Empedocles. We are tempted to ask what is the relation of his combining proportion to the soul and to Love, the cause which in his system brings things together [§ 7].

But, although these objections may be urged against the view that soul is a harmony of opposites, yet at the same time the rejection of this view has difficulties of its own. If the soul has nothing to do with the combining ratio of the bodily parts, (1) why should the destruction of the flesh and other bodily parts involve the simultaneous destruction of the soul, and (2) what is it that perishes when the soul leaves the body [§ 8]?

b 32 ἡ μὲν ἁρμονία... 33 ἡ σύνθεσις. This is given more fully below, 408 a 5—9 εἰ λέγομεν... λόγον, where the meaning σύνθεσις more naturally precedes that of τῶν μειχθέντων λόγος. By λόγος must be understood "ratio" or "proportion," *Ind. Ar.* 437 a 40, viz. the ratio which expresses the relation to each other of component parts. If certain elements go to form a compound or mixture, the character of the mixture will vary with the proportion in which they are compounded. Cf. 416 a 17, 426 a 28, b 3, 7, 429 b 16. A modern chemical formula is just such a λόγος. Cf. 410 a 1—6, and the passages cited in the notes *ad loc.*, *Metaph.* 993 a 15—22, *De Part. An.* I. 1, 642 a 18—28, *De Gen. An.* I. 2, 734 b 28—735 a 4. It is not always easy to determine when λόγος, standing alone without τῆς μείξεως, has the meaning of ratio or proportion and when it has the meaning of form (403 b 2). In 424 a 31, e.g., the word has been variously taken.

b 33. τὴν δὲ ψυχὴν οὐδέτερον οἶόν τ' εἶναι τοῦτων. Though no reason is given, we are probably justified in assuming with Them. and Philop. that it is because soul is a substance (οὐσία): and neither a mathematical ratio nor a combination of parts can be this οὐσία: Them. 24, 32 H., 45, 2 Sp., Philop. 146, 23—26. The objection taken below (408 a 11—18) is that from both meanings of harmony the result would be a plurality of souls instead of a single soul.

b 34 ψυχῇ δὲ... 408 a 1 ὡς εἰπεῖν. Join μάλιστα with τοῦτο=τὸ κινεῖν, "der Seele dagegen wird dies allgemein als bestimmteste Bezeichnung ihres Wesens (μάλιστα) zugeschrieben" (Bz). τοῦτο (i.e. τὸ κινεῖν) μάλιστα τῇ ψυχῇ ἀπονέμειν=to define the soul as τὸ κινεῖν, to make motivity its most essential attribute. Cf. 403 b 29. Here ὡς εἰπεῖν goes with πάντες. Cf. 405 b 11.

408 a 1 ἀρμόζει δὲ μάλλον... 2 ἁρμονίαν. This is one of two objections, which, as we learn from Philop. (144, 22 sqq. and 147, 8—10), A. urged in his dialogue *Eudemus*. Disease, the opposite of health, A. there maintains, is one manifestation along with weakness and ugliness of ἀναρμοστία τοῦ ἐμφύχου σώματος: more precisely it is ἀσυμμετρία τῶν στοιχείων (*frag.* 41, 1482 a 6 sqq., Philop. 144, 30 sqq.). Health is said to be εὐκράσια τοῦ σώματος *De Part. An.* III. 12, 673 b 26 and in *Toph.* VI. 2, 139 b 20 sq. it is defined as συμμετρία θερμῶν καὶ ψυχρῶν. Cf. *Toph.* VI. 6, 145 b 8; also *Metaph.* 1032 b 6—28, a passage



which implies that uniformity of temperature is part of health. On the close connexion between early medicine and early physical speculation, attested by *De Sensu*, I. 1, 436 a 17—b 1 (cf. *De Resp.* 27 (21), 480 b 22—30), see Gomperz, *Greek Thinkers*, Book III., c. 1, *Eng. Tr.*, p. 275 sqq.

a 2 καὶ ὅλως...3 ἢ κατὰ ψυχῆς, e.g. strength and beauty. But, as A. remarked in the *Eudemus*, Thersites, ugly as he was, nevertheless had a soul (Philop. 144, 30—145, 6).

a 3. ἀποδιδόναι...5 ἁρμονίᾳ τινί. The terms, τὰ πάθη καὶ τὰ ἔργα, are conjoined in 409 b 5, see notes on 403 a 6, 402 a 8. They denote the functions of soul generally, some of which, νόησις, αἰσθησις and ὄρεξις, are specified below a 12 sq. Ἀποδιδόναι, to assign them as ἴδια or essential properties. Cf. 405 a 17, 402 b 23 and, for the construction, *De Sensu* 2, 438 b 18 ἀποδιδόναι καὶ προσάπτειν ἕκαστον τῶν αἰσθητηρίων ἐνὶ τῶν στοιχείων.

a 5. χαλεπὸν γὰρ ἐφαρμόζεν. The verb is chosen for the etymological connexion with ἁρμονία. It means to fit or adjust facts to a theory, e.g. *Metaph.* 986 a 6. Cf. also *Anal. Post.* I. 7, 75 b 4 οὐκ ἔστι τὴν ἀριθμητικὴν ἀποδείξειν ἐφαρμόσαι ἐπὶ τὰ τοῖς μεγέθεσι συμβεβηκότα.

a 5 ἔτι δ' εἰ λέγομεν...18 ἁρμονία καὶ ψυχῆ. Bonitz *loc. cit.* pointed out that, although this argument is introduced by ἔτι δὲ as if it were something new, it presents in an expanded form the first of the four arguments so briefly stated above, viz. 407 b 32—4 καίτοι...τούτων. The same two meanings of ἁρμονία are proposed and the same conclusion enforced οὐδετέρως μὲν οὖν εὐλογον (a 9 sq.), the difference being that reasons are now given for this conclusion (a 10—18). We may say that 407 b 32—4 sketches the course of an argument and 408 a 5—18 presents the same argument amplified and worked out in detail. Most readers will agree that no sane author would present the two passages as separate co-ordinated proofs. Further, Bonitz pointed out the insuperable objections to any critical remedy. We cannot transpose the latter passage to follow 407 b 34 because of the remarks upon Empedocles (408 a 18—23), which grow out of it: while the excision either of (407 b 32—4) or of (408 a 5—18) would leave a manifest lacuna. There is nothing to suggest that the two passages are not by A. The fault must lie in the editing.

a 5 εἰ λέγομεν...6 ἀποβλέποντες, if we use the term with two meanings in view. This implies that we do so use it. εἰ is almost εἴπερ. This is one of many instances where the participle conveys the more important part of the predication. The apodosis οὐδετέρως εὐλογον is out of all relation to λέγομεν, "we use the term," and the connexion of the two clauses has perplexed everyone. It seems to me to be simply this: "if we look at the two senses of the term, we find that neither is applicable to the soul." Cf. *infr.* 408 b 1 εἰς τὰ τοιαῦτα ἀποβλέψας, and for the metaphorical sense of ἀποβλέποντες 404 b 7, *Metaph.* 986 b 24, and βλέψαντες *De Caelo* III. 8, 306 b 31.

a 6. εἰς δύο ἀποβλέποντες=διχῶς, which Philop. rightly substitutes 148, 7: i.e. εἰς does not govern a 7 σύνθεσιν or a 9 λόγον as we might at first sight suppose; they are governed by λέγομεν.

a 6 κυριώτατα μὲν...9 ἐντεῦθεν δὲ. A. is aware of the etymological connexion of ἁρμονία with ἀρμόζειν and emphasises its earlier meaning, which is attested by the usage of Homer (e.g. *Od.* v. 248, 361) and Herodotus (II. 96): viz., the close fit or adjustment of component parts. He decides that from this is derived the other meaning "ratio" or mathematical proportion between component parts. For κυριώτατα cf. 418 a 2 sq., 418 a 24, 412 b 9 τὸ κυρίως, int. λεγόμενον.

a 6 τῶν μεγεθῶν...7 τὴν σύνθεσιν αὐτῶν. The addition of αὐτῶν=τῶν

μεγεθῶν is superfluous; it is as if a relative clause had preceded, e.g. ὅσα τῶν μεγεθῶν ἔχει κίνησιν καὶ θέσιν. Cf. 414 a 29 sq. τοῖς δὲ τινὲς αὐτῶν, although τῶν δυνάμεων has preceded. I take τῶν μεγεθῶν as partitive gen. and ἐν=in the case of. Philop. 148, 7 λέγομεν γὰρ τὴν ἁρμονίαν, φησί, διχῶς· καὶ κατὰ πρῶτον μὲν λόγον τὴν σύνθεσιν τῶν σωμάτων, ὅταν κ.τ.λ., Them. (25, 1 H., 45, 10 Sp.) more freely ἐλήλυθε δὲ αὕτη ἡ δόξα μάλιστα μὲν ἐκ τῶν μεγεθῶν, ὅσα ἔχει θέσιν καὶ κίνησιν, ἐπειδὴ ταῦτα, ὅταν οὕτως ἀλλήλοις παρατεθῇ ὥστε μηδὲν συγγενὲς παραδέχεσθαι, τότε λέγεται ἡρμόσθαι καλῶς, καὶ ἡ σύνθεσις αὐτῶν ὀνομάζεται ἁρμονία. Bonitz (l.c.) "The word ἁρμονία is used by us in two different ways; when used of things corporeally extended and situated in space it means that continuity of connexion which excludes the reception or interpolation of what is cognate."

If τῶν μεγεθῶν is partitive, it is implied that there are μεγέθη which are without κίνησις and θέσις, i.e. τὰ μαθηματικά. See the excellent note by Philop. 148, 18—24. For θέσις cf. *Phys.* IV. 1, 208 b 22 δηλοῖ δὲ καὶ τὰ μαθηματικά· οὐκ ὄντα γὰρ ἐν τόπῳ ὅμως κατὰ τὴν θέσιν πρὸς ἡμᾶς ἔχει δεξιὰ καὶ ἀριστερά, ὥστε μόνον αὐτῶν νοεῖσθαι τὴν θέσιν, ἀλλὰ μὴ ἔχειν φύσιν τούτων ἕκαστον, i.e. we think them as having position in space, though in reality they have not.

a 7 ἐπειδὴν... 8 παραδέχεσθαι. Here συναρμόζωσιν is intransitive and plural with a neuter plural subject. In order to form components of a larger whole, magnitudes must be brought into some sort of connexion. If they are not continuous nor in contact, they must at least be arranged in a determinate succession. Magnitudes may be (1) continuous, *συνεχῇ*, when their extremities coincide and they are really parts of the same magnitude or (2) merely in contact, *ἀπτόμενα*, like the bricks in a house or the grains in a heap of sand or the sticks in a bundle. There is a third case in which the magnitudes are even more loosely connected, viz. by being arranged in a definite succession one after the other, so as to form a series or pattern. Thus we may build a row of detached houses or plant trees in parallel lines to form an avenue, or in a pattern like a quincunx. The symmetry of the avenue or the pattern or the row of houses would not be affected by the intrusion between the component magnitudes of other objects, such as trees or gardens in the case of the houses, provided no unit of the series itself were interpolated. Cf. *Phys.* VI. 1, 231 a 22 *συνεχῇ μὲν ὦν τὰ ἔσχατα ἔν, ἀπτόμενα δ' ὦν ἅμα, ἐφεξῆς δ' ὦν μηδὲν μεταξύ συγγενὲς* and *Simpl. ad loc.* 925, 25 sqq., 926, 24 sqq., 927, 11—13, 928, 11—13. A. extends the meaning of *σύνθεσις* so as to include τὰ ἐφεξῆς, and *a fortiori* τὰ ἀπτόμενα and τὰ συνεχῇ. Philop. 148, 8 sqq. ὅταν οὕτω παρατεθῇ, ὥς μηδὲν συγγενὲς αὐτῶν σῶμα δύνασθαι μεταξύ ἐμβληθῆναι, οἷον ὅταν οὕτως ἀκριβῶς συντεθῶσιν οἱ λίθοι ἐξ ὧν ἡ οἰκία, ὥς μὴ δύνασθαι ἄλλον ἐμβληθῆναι μεταξύ λίθον ἢ ξύλον ἢ τι τῶν συγγενῶν καὶ βαρέων σωμάτων, ἡρμόσθαι λέγομεν τοὺς λίθους, καὶ ἁρμονίαν τὴν τούτων σύνθεσιν. Cf. the passage of Them. cited in the last note. Alex. Aphr. goes into further details *De An.* 25, 15 ἐπὶ τῆς πρώτης ἁρμονίας [int. τῆς ἐπὶ τῆς τῶν σωμάτων συνθέσεως λεγομένης] οὐ ταῦτόν ἡ ἁρμονία καὶ τὸ γινόμενον ἐκ τῶν ἡρμωμένων. οὐ γὰρ ἐπεὶ καθ' ἁρμονίαν παρίκειται τὰ ξύλα ἀλλήλοις τὰ ἐν τῷ βάθρῳ, διὰ τοῦτο. τὸ βάθρον ἁρμονία. οὐδ' ἐπεὶ οἱ λίθοι εἰσὶν καθ' ἁρμονίαν συγκεκριμένοι, ἥδη καὶ οὗτος ἁρμονία ὁ ἐκ τῆς τούτων γεγονὼς ἁρμονίας. The best example of τὸ ἐφεξῆς is furnished, not by magnitudes, but by the series of numbers, where interpolation of *συγγενὲς τι* is impossible; e.g., 4½, if inserted between the integers 4 and 5, is not really *συγγενὲς*: cf. *Μεταφρ.* 1085 a 3 ἀφή οὐκ ἔστιν ἐν τοῖς ἀριθμοῖς, τὸ δ' ἐφεξῆς.

a 9. ἐντεῦθεν δὲ καὶ τὸν τῶν μεμειγμένων λόγον, int. λέγομεν τὴν ἁρμονίαν (a 5). Philop. 148, 14 ἐκ δὲ τούτων, φησί, μεταφέρομεν τὸ τῆς ἁρμονίας ὄνομα καὶ ἐπὶ τὸν λόγον τῶν μεμειγμένων, οἷον ἔν τε τῶις κεκραμένοις καὶ ἐν τοῖς κατὰ μουσικὴν. See

above on 407 b 32. A. is of opinion that the meaning "ratio of component parts" is secondary and of later development, but for the theory it is certainly the more important of the two.

a 9. οὐδετέρως μὲν οὖν εὐλογον, int. ἐστὶ τὴν ψυχὴν ἁρμονίαν τινὰ εἶναι (407 b 30).

a 10. εὐεξέταστος, practically equivalent to εὐελεγκτος as Philop. interprets it, 148, 32: i.e. the theory which defines soul as ἁρμονία in the sense of σύνθεσις is easy to refute.

a 11. πολλὰ τε γὰρ...πολλαχῶς, ἔχουσαι or συγκείμεναι may be understood with πολλαχῶς; Philop. 149, 14 πολλὰ μὲν ἐπειδὴ καὶ πολλὰ τὰ μέλη, πολλαχῶς δὲ ἐπειδὴ ἄλλο ἄλλως τὴν τῶν ὁμοιομερῶν σύνθεσιν ἔχει. From A.'s own standpoint the all-important distinction in the parts of animal bodies is that between τὰ ὁμοιομερῆ and τὰ ἀνομοιομερῆ: *De Part. An.* II. 1, 647 a 1 τὰ μὲν ἀπλὰ καὶ ὁμοιομερῆ, τὰ δὲ σύνθετα καὶ ἀνομοιομερῆ τῶν μορίων ἐν τοῖς ζῴοις ἐστίν. See generally the classification of these συνθέσεις in *De Part. An.* II. c. 1, where A. starts (646 a 12) τριῶν δ' οὐσῶν τῶν συνθέσεων, viz. of the parts ἐξ ὧν συνέστηκεν ἕκαστον τῶν ζῴων, and goes on to explain that these three are (1) ἡ ἐκ τῶν καλουμένων στοιχείων (or rather the elemental qualities, hot, cold, dry, moist, etc.), (2) ἡ τῶν ὁμοιομερῶν φύσις (a 20), (3) ἡ τῶν ἀνομοιομερῶν (a 23): 646 b 10 ἐξ ἀμφοτέρων μὲν οὖν τὰ ζῶα συνέστηκε τῶν μορίων τούτων, ἀλλὰ τὰ ὁμοιομερῆ τῶν ἀνομοιομερῶν ἕνεκέν ἐστιν. The former, ὁμοιομερῆ, include bone, flesh, blood and the like, or roughly what modern physiologists describe as tissues (646 a 20 sqq.), the latter (ἀνομοιομερῆ or ὀργανικά μόρια 647 a 3) include face, hand, foot, etc., and especially the sense-organs (αἰσθητήρια), structures which have their several functions in the animal economy as wholes, but are incapable of resolution into parts subserving the same functions.

a 12. τίνος οὖν...σύνθεσιν εἶναι. The soul has been defined as ἁρμονία = σύνθεσις. A. argues that what is true of the whole soul must be true of the parts of soul, the principle which he afterwards applies more explicitly as a critic, 411 b 15 sqq., and to his own definition, 412 b 22—25. Cf. *Μεταφῆ.* 1034 b 20—24 and the general discussion in Z., c. 10. But there are many and various συνθέσεις in the animal body. If the unity of soul is to be maintained, these various συνθέσεις must be equated to the various parts or faculties of soul. A. selects three of the faculties recognised by himself and challenges his opponents to state what are the bodily parts of which these faculties are respectively συνθέσεις. Them. (25, 13 H., 45, 27 Sp.) γελῶιον γὰρ τοιούτων μορίων [e.g. ὁσῶν, νεύρων] ἢ τὸν νοῦν ἢ τὴν αἴσθησιν σύνθεσιν λέγειν. There is a similar argument in 411 b 14—19, where it is assumed that if soul is defined as that which holds the body together it will follow that each faculty of soul will hold a part of the body together. The objection here would be all the greater for νοῦς, because according to A. it has no bodily organ (429 a 26 sq.).

a 14 οὐ γὰρ τὸν αὐτὸν...15 καθ' ἣν ὁστούν, int. ἐστὶν or συνέστηκεν. In the *De Part. An.* A. adopts the view tentatively put forward by Empedocles that the tissues (ὁμοιομερῆ) are certain specific combinations of the four elements. Hence, as Bonitz remarks (l.c.), the words ἡ μείξις...ὁστούν might have been found unaltered in an exposition of the view of Empedocles. Cf. *De Part. An.* I. 1, 642 a 18—25 ἐνιαχοῦ δὲ πού αὐτῇ [the formal cause] καὶ Ἐμπεδοκλῆς περιπίπτει, ἀγόμενος ὑπ' αὐτῆς τῆς ἀληθείας, καὶ τὴν οὐσίαν καὶ τὴν φύσιν ἀναγκάζεται φάναι τὸν λόγον εἶναι, οἷον ὁστούν ἀποδιδούς τί ἐστίν· οὔτε γὰρ ἐν τι τῶν στοιχείων λέγει αὐτὸ οὔτε δύο ἢ τρία οὔτε πάντα, ἀλλὰ λόγον τῆς μίξεως αὐτῶν. δῆλον τοίνυν ὅτι καὶ ἡ σαρξ τὸν αὐτὸν τρόπον ἐστί, καὶ τῶν ἄλλων τῶν τοιούτων μορίων ἕκαστον. Also *Μεταφῆ.* A., c. 10 and for A.'s own view 429 b 16, *De Gen. An.* II. 734 b 31 σκληρὰ μὲν οὖν καὶ μαλακὰ καὶ γλίσχρα καὶ κραῦρα, καὶ ὅσα ἄλλα πάθῃ ὑπάρχει τοῖς

ἐμφύχους μορίους, θερμότης καὶ ψυχρότης ποιήσειεν ἄν, τὸν δὲ λόγον ᾧ ἤδη τὸ μὲν σὰρξ τὸ δ' ὀστοῦν, οὐκέτι. 'So many degrees of "hot" and so many degrees of "cold," combined with so many degrees of "moist" and so many degrees of "dry," produce *Flesh*: whilst less or more degrees of "hot" and "cold," combining with less or more degrees of "moist" and "dry," produce *Bone* or *Gold*' (H. H. Joachim, *Journal of Phil.* XXIX., p. 76).

a 16. συμβήσεται οὖν...κατὰ πᾶν τὸ σῶμα. From ψυχὰς must be supplied τὸ ἐμψυχον as the subject to ἔχειν (or perhaps τὸ ζῶον). This is not very different from supplying ὁ ἄνθρωπος or ὁ ὀργιζόμενος out of ὀργίζεται 403 a 22.

a 17. εἶπερ πάντα μὲν ἐκ τῶν στοιχείων μεμειγμένων. With πάντα supply τὰ σωματικά μέρη. It is admitted that all the ὁμοιομερῇ are thus constructed (see above) and the ἀνομοιομερῇ, i.e. the various organs, are built up out of the ὁμοιομερῇ (*De Gen. An.* I. 1, 715 a 10). The first condition of a true μείξις as laid down in *De Gen. et Corr.* I. 10, 328 a 9 sqq., is that the ingredients must be ὁμοιομερῇ: the whole must be like any and every part, ἔξει τὸν αὐτὸν λόγον τῷ ὅλῳ τὸ μόριον, as each drop of water is truly water.

a 18. καὶ, explicative.

a 19. παρ' Ἐμπεδοκλέους. The examination of ὁ λόγος τῆς μείξεως as an interpretation of the harmony by which soul is defined has brought us in contact with a well-known tenet of Empedocles, who regarded the peculiar nature of those bodies which A. calls ὁμοιομερῇ as determined by the different proportions of his four elements (410 a 2 sqq.). Apparently he had not explained in what relation this proportion stood to soul as the vital principle. Hence A. takes occasion parenthetically to address three enquiries or dilemmas to Empedocles:—(1) How is the λόγος τῆς μείξεως related to ψυχή? Are they, or are they not, identical? (2) Does φιλία, the combining force of the system, produce any and every mixture of elements, or only the appropriate one? (3) Is φιλία itself identical with the λόγος τῆς μείξεως or not? The inconsistencies which must result, whatever answers be given, are left undeveloped.

a 19. ἕκαστον γὰρ αὐτῶν. Comparing πάντα μὲν ἐκ τῶν στοιχείων μεμειγμένων (408 a 17) and (15) ἡ μείξις καθ' ἣν σὰρξ καὶ καθ' ἣν ὀστοῦν, we conclude that the meaning of αὐτῶν is "those bodily parts" called by A. ὁμοιομερῇ, which Empedocles as well as A. supposed to be combinations of the four elements in fixed proportions. Empedocles certainly so regarded bone, and, if bone, A. argues *De Part. An.* I. 1, 642 a 22—24, so also in strict consistency flesh and the rest. λόγῳ τινὶ φησὶν εἶναι. Cf. 410 a 1 οὐ γὰρ ὁπωσοῦν ἔχοντα τὰ στοιχεῖα τούτων ἕκαστον [man, god, flesh, bone as examples of τὸ σύνολον], ἀλλὰ λόγῳ τινὶ καὶ συνθέσει.

a 20. ἢ μᾶλλον ἑτερόν τι οὔσα. The subject is ἡ ψυχή, and the gender of ἑτερόν τι which is predicative is not assimilated, so that this case is analogous to 403 b 29 and not to 404 a 26.

a 21. ἐγγίνεται τοῖς μέλεσιν; "or does the soul supervene in the members, being something distinct from the ratio?" The verb ἐγγίνεσθαι recurs 408 b 18, 414 a 27, 426 a 5, being in all three passages applied to form becoming immanent in this or that matter.

a 21 ἡ φιλία...22 μείξεως. Attraction personified as Love is in Empedocles' system the moving or combining cause which brings the four elements together to form particular things, just as Repulsion or Strife (νείκος) is the cause of segregation, dissolving concrete things into their elements *Metaph.* 985 a 21—31, 988 a 33 sq. Such unity as particular things have is brought about by this force, φιλία: *Metaph.* 1001 a 14 δόξειε γὰρ ἂν λέγειν τοῦτο [int. τὸ ἐν] τὴν φιλίαν εἶναι· αἰτία γοῦν ἐστὶν αὕτη τοῦ ἐν εἶναι πᾶσιν. Ultimately it will unite all things in the

σφαῖρος. On τῆς τυχούσης=fortuitous, see on 407 b 19: it means any and every mixture, die erste beste Mischung. Every mixture implies a ratio of some sort between its components. Alex. *De Anima* 26, 3—13, Simpl. 56, 5—7.

a 22. ἡ τῆς κατὰ τὸν λόγον, that mixture which is determined by the ratio: κατὰ=according to. Cf. 408 a 15. καὶ αὕτη, i.e. ἡ φιλία. With ὁ λόγος supply τῆς μείξεως.

a 24. ταῦτα μὲν οὖν ἔχει τοιαύτας ἀπορίας. Bonitz has shown (*loc. cit.*) the impossibility of supposing that these words dismiss the parenthetical difficulties raised for Empedocles in 408 a 18—23, and has proved that Torstrik was mistaken in supposing the next passage 408 a 24—28 to continue a discussion on the same lines. Bonitz rightly perceived that the clause before us passes over the parenthetical remarks à propos of Empedocles, and sums up all the objections urged against ἀρμονία, whichever interpretation we give the term, i.e. it sums up the results of the whole passage from 407 b 32 to 408 a 18 (including the ill-coordinated 5th argument 408 a 5—18 καὶ ψυχῇ). This can be seen from the character of the arguments upon which we are entering 408 a 24—28. We dismiss the arguments *contra* and consider what is the consequence of rejecting the theory that soul is harmony of some sort. The theory cannot be adopted, but to reject it lands us in fresh difficulties, as A. points out. Thus the whole criticism tends to pass into a discussion of antinomies similar to those which fill *Metaph.* B., where arguments *pro* and *contra* are impartially stated and no decision is given *ex cathedra*.

a 24. εἰ δ' ἐστὶν ἕτερον ἢ ψυχῇ τῆς μείξεως. These words bear a superficial resemblance to 408 a 20 sq. πότερον...μέλειεν, and it might be thought that A. is still dealing with Empedocles and developing the negative side of that enquiry, but, as the text stands, this is impossible, since εἰ δὲ answers ταῦτα μὲν and the clause which the latter words introduce ταῦτα μὲν...ἀπορίας must be of a general character and cannot without violence be interpreted as restating merely the first of the three enquiries addressed to Empedocles. On the other hand the words may very well mean "If we reject the definition which makes the soul a harmony." This could have been expressed more directly εἰ δ' ἐστὶν ἕτερον ἢ ψυχῇ τῆς ἀρμονίας. But that τῆς μείξεως should replace τῆς ἀρμονίας is not strange. A.'s objections aim at reducing ἀρμονία, if interpreted in one way directly, if in another indirectly, to μείξις (or κρᾶσις or σύνθεσις). Given the μεμειγμένα or σύνθετα, the theory of harmony requires nothing more. The soul, it asserts, is either the arrangement of these materials or the ratio in which they combine, arrangement and ratio being alike implied in τὰ μεμειγμένα themselves, of course πως ἔχοντα: cf. *Metaph.* 1036 b 24, 30. To assert that this is not all, that some other factor is necessary, is to impugn the theory. Properly speaking, σύνθεσις means a mechanical combination or parathesis, where the components suffer no internal change from being placed side by side, while κρᾶσις always and μείξις often denote what we should call a chemical combination, the component parts being modified or even losing their identity when they are brought together. Cf. *De Gen. et Corr.* I. c. 10, especially 328 a 3 sqq. The use of the terms, however, is not always consistent: compare *Metaph.* 1042 b 16 sq., where κρᾶσις is given as an instance of σύνθεσις, with 1092 b 24, 26, where μείξει is distinguished from συνθέσει, and 1085 b 12 μείξις ἢ θέσις ἢ κρᾶσις, where these three modes of forming compounds are mutually exclusive.

a 25 τί δὲ ποτε...26 τοῦ ζῴου. Alex. Aphr. ap. Philop. 152, 3 sqq. gave two interpretations of this sentence. According to the first, which is accepted by Simplicius and Philoponus, the question put is: "Why, when the mixture con-

stituting flesh perishes, do the mixtures which constitute the other bodily parts perish also?" Hence Alex. Aphr. concluded that the intention of A. is to prove that one mixture must be substituted for the plurality of mixtures or souls to which, 408a 16, the theory of harmony leads. The second interpretation of Alex. Aphr. divided the sentence into two separate questions, punctuating after *ἀναιρείται*, and made *ἡ ψυχὴ* the subject of *ἀναιρείται*, as is done by Themistius and the modern editors: (Philop. 152, 10) *εἰ μὴ ἔστιν ἁρμονία ἡ ψυχὴ, τί ἅμα ἀναιρείται τῆς σαρκὸς ἀναιρεθείσης; εἴτα ὡς ἀπὸ ἄλλης ἀρχῆς ὁμοίως δὲ καὶ τοῖς ἄλλοις μορίοις ζῶον ἀντὶ <τοῦ> καὶ τοῖς ἄλλοις μορίοις συναναιρείται ἐκάστου ἀναιρουμένου*. The first interpretation is obviously not based on our present text. It is not inconsistent with *ἅμα τῷ...καὶ τὸ τοῖς ἄλλοις μορίοις*, but it has not been pointed out that it is equally consistent with *ἅμα τὸ...καὶ τὸ τοῖς ἄλλοις μορίοις*, the reading actually given by Philoponus both in his lemma and his interpretation (see Hayduck's critical apparatus 151, 8: in the Aldine edition of Philop., however, Trincavellus printed *ἅμα τῷ*). There is, moreover, other evidence of such a variant, viz. *ἅμα τὸ* for *ἅμα τῷ*, a 25, in our cod. V, collated by Bekker, and Sophonias, who obviously followed the second interpretation of Alex. Aphr., presents in Hayduck's edition (26, 29) *ἅμα τὸ σάρκα εἶναι*, though a reference to the critical apparatus shows that the MSS. are divided, some having *τῷ σάρκα* and one, A, *τὸ σαρκί*. The words of Simplicius, too, (56, 10) *πὼς καὶ μᾶς ἀναιρουμένης μίξεως, τῆς καθ' ἣν τὸ σαρκί εἶναι, καὶ αἱ τῶν ἄλλων ἀναιροῦνται μίξεις μορίων, καθ' ὧς αὐτοῖς τὸ εἶναι ὡς ζῶον μορίοις* are quite as compatible with *ἅμα τὸ...καὶ τὸ τοῖς ἄλλοις μορίοις* as with *ἅμα τῷ...καὶ τὸ τοῖς ἄλλοις μορίοις*. Torstrick supposed Alexander's two interpretations to be based on two different readings, in both of which *ἅμα* was followed by *τῷ*, the variation only affecting a 26. With reference to *τῷ* before *τοῖς ἄλλοις* in this line he observes: Alexander, si Philopono [152, 3—6] fides, et τὸ novit et in aliis codicibus neutrum vocabulum videtur invenisse [cf. Philop. 152, 10—17], siquidem Al. haec habet: *εἰ δ' ἔστιν ἕτερον ἡ ψυχὴ τῆς μίξεως, τί δὴ ποτε ἅμα τῷ σαρκί εἶναι ἀναιρείται* (int. ἡ ψυχὴ) καὶ (omisso τῷ vel τὸ) τοῖς ἄλλοις μορίοις τοῦ ζῶου; Rectius Themistius (25, 26 H., 46, 18 Sp.) πάντων γὰρ εἰ παντελῶς ἕτερον ἡ ψυχὴ τῆς μίξεως καὶ τῆς κράσεως, διὰ τί τούτων φθειρομένων φθίρεται εὐθὺς ἡ ψυχὴ; λυομένου γὰρ τοῦ λόγου τῆς σαρκὸς καὶ τῶν ἄλλων ἐκάστου τῶν τοιούτων λύεται εὐθὺς καὶ ἡ ψυχὴ. On τὸ σαρκί εἶναι (which is one way of expressing τὸ τί ἦν εἶναι of σάρξ), form, quiddity or notion of flesh, see *notes* on 429 b 10 sqq., *Ind. Ar.* 221 a 34 *εἶναι* cum dativo praedicati notionem substantialem significat, 429 b 10 sqq. Hence without any predicate attached Simpl. *in Phys.* 735, 31 τὸ εἶναι...τὸ συνήθως ὑπὸ τοῦ Περιπάτου λεγόμενον καὶ τὸ εἶδος σημαῖνον. For the omission of a second *εἶναι* with τοῖς ἄλλοις μορίοις, cf. 413 b 29 αἰσθητικῷ γὰρ εἶναι καὶ δοξαστικῷ [sc. εἶναι] ἕτερον, *Phys.* I. 3, 186 a 28 ἄλλο γὰρ ἔσται τὸ εἶναι λευκῷ καὶ τὸ δεδεγμένῳ [sc. εἶναι], *Μεταφῆ.* 1031 a 32, b 8, 9.

Why, asks A., does the soul itself cease to exist as soon as the form of flesh or of some other bodily parts is destroyed? The question assumes that soul is perishable: destroy the flesh and other bodily parts, viz. the *ὁμοιομερῆ*, and the soul ceases to exist. How is this to be accounted for, if the theory of harmony be rejected? Flesh is probably singled out because it is the necessary condition of touch, the one sense which is indispensable for the animal: cf. 414 b 3, 413 b 8 sq., 435 b 4—19.

a 26. *πρὸς δὲ τοῦτοις*. A second difficulty: not only does the destruction of the flesh and other bodily parts imply the simultaneous destruction of the soul, but also the body decays as soon as the soul leaves it. The second argument is a sort of pendant or complement to the last, and in introducing it Them. (25,

29 H., 46, 22 Sp.) replaces *πρὸς δὲ τούτοις* by *ἀλλὰ καὶ ἔμπαλιν* (so Philop. 152, 24 sq.), which gave Torstrik unnecessary trouble.

a 26 *εἴπερ μὴ ἔκαστον*...28 ὁ λόγος τῆς μείξεως. A plurality of souls dispersed over the body was proved (a 16 sqq.) to follow from the assumption that soul is harmony in the sense of *λόγος τῆς μείξεως*. In other words, each of the bodily parts will in that case have a soul of its own. If we reject this assumption, we reject the consequence with it. The *εἴπερ μὴ* clause supposes the consequence to be no longer true, the *εἰ μὴ* clause supposes the assumption on which this consequence depends to be no longer true. It remains to see what follows. A double conditional clause recurs 409 b 2 sq.

a 28. *τί ἐστιν...ἀπολείπουσιν*. If, then, we disallow the theory of harmony, the connexion between body and soul so manifestly seen at death is left unexplained: we do not see why the destruction of the body involves that of the soul, or why the extinction of life (here called the departure of the soul or vital principle) involves the disintegration of the body. There is no possible way of accounting for the decay and dissolution of the bodily parts which, as a matter of fact, follow upon the departure of the soul at death: 411 b 8 *ἐξελθούσης γοῦν διαπνέεται καὶ σίηπεται*. Cf. *De Part. An.* 641 a 18 sq. We are now assuming that the soul is not the *λόγος τῆς μείξεως*. Obviously this *λόγος* itself is not destroyed; for anything that we can urge to the contrary, the departure of the soul leaves it unaffected, and it is this which determines the existence of flesh as flesh and bone as bone, 408 a 15 *καθ' ἣν [μείξιν] σὰρξ καὶ καθ' ἣν ὀστούν*. The objections last urged (408 a 24—28) suggest that when A. comes to set forth his own theory he will take into account this mutual connexion of soul and body.

**408 a 29—b 29.** At this point comes a pause in the criticism and refutation. The two theories of harmony and circular motion are dismissed, but, before A. proceeds to refute the self-moving number of Xenocrates, he stops to consider once more if motion can be attributed to the soul and, if so, in what sense this is possible [§ 9]. This leads him to ask whether the functions of soul might not with greater propriety in all cases be referred to the animal to whom the soul belongs [§§ 10—12], and this in turn leads to a provisional discussion of intellect or thought, *νοῦς*, which would seem to be unique among such functions [§ 14].

408 a 30. *κατὰ συμβεβηκὸς δὲ*. See 406 a 4 sqq. Such indirect motion is there qualified as *καθ' ἕτερον* (a 5). The general conclusion is *Phys.* VIII. 6, 259 b 16 *ἐν πᾶσι δὲ τούτοις (int. τοῖς αὐτὰ αὐτὰ κινούσιν) κινεῖται τὸ κινεῖν πρῶτον καὶ τὸ αἴτιον τοῦ αὐτοῦ ἐαυτοῦ κινεῖν ὑφ' αὐτοῦ, κατὰ συμβεβηκὸς μέντοι· μεταβάλλει γὰρ τὸν τόπον τὸ σῶμα, ὥστε καὶ τὸ ἐν τῷ σώματι ἔν καὶ τὸ ἐν τῇ μοχλείᾳ κινεῖν ἐαυτό.*

a 31. *καθάπερ εἶπομεν*. The reference is not easily made out: *Repetuntur, quae de animi motu constituta sunt* (Trend.). What is here stated explicitly is, however, implied more than once in c. 3, e.g. 406 a 30 sqq., b 5—8. *ἔστι = ἔξεστι. κινεῖν ἐαυτήν*. Self-motion is merely a special case of causing motion, if both are *κατὰ συμβεβηκός*. Every passenger in a boat is moved *κατὰ συμβ.*, while the oarsman who helps to propel it indirectly moves himself because he is in the boat. Cf. *Phys.* VIII. 6, 259 b 16—20 just cited.

a 32. *ὅλον* here, as often, = “that is to say,” or “I mean,” referring to *κινεῖν ἐαυτήν*. Cf. 421 b 9, 429 a 6, 8.

a 34 *ἀπορήσειεν ἄν...408 b 1 ἀποβλέψας*. The stress is rather on the participle than on the finite verb. In discussing the question whether soul is or is not moved, it would be more reasonable to fix our attention on the facts now to be cited.

408 b 5. τὸ δ' οὐκ ἔστιν ἀναγκαῖον, "but this does not necessarily follow," i.e. the generally recognised fact that the psychical processes above mentioned are motions (*κινήσεις*) does not prove that soul itself is moved. Compare the demonstrative force of the article before δὲ in 416 a 13 τὸ δὲ συναίτιον and 423 b 4 τὸ δ' οὐκ ἔστιν.

b 6. καὶ ἕκαστον κινεῖσθαι τούτων, i.e. pain, anger, fear, can each of them be called a movement, *κινεῖσθαι*, of a particular sort, as A. goes on to explain: to feel pain is to be moved in a particular way, and so on.

b 7. τὸ δὲ κινεῖσθαι ἔστιν ὑπὸ τῆς ψυχῆς, i.e. the soul is the efficient cause of the movement in question. Cf. 411 a 29 γίνεται δὲ καὶ ἡ κατὰ τόπον κίνησις τοῖς ζώοις ὑπὸ τῆς ψυχῆς. As here εἶναι, so there γίνεσθαι is followed by ὑπὸ and the genitive, which is more common after συμβαίνει or a passive verb. Cf. Thuc. I. 130, § 1 ὃν ἐν ἀξιώματι ὑπὸ τῶν Ἑλλήνων: *ib.* VI. 15, § 3.

b 8. τὸ τὴν καρδίαν ὥδι κινεῖσθαι. The movement of the heart is of a particular kind (ὥδι) according to the definition, 403 a 25 sqq., 31 sq. The efficient cause is the soul, so that ὑπὸ τῆς ψυχῆς must be mentally supplied with all three examples ὀργή, φόβος and διάνοια: cf. 432 b 31 sq.

b 9. ἡ τὸ τοῦτο ἴσως ἡ ἕτερόν τι. Here τὸ τοῦτο is Bonitz' conjecture for τοιοῦτον of MSS.: τοῦτο and ἕτερόν τι are subjects of κινεῖσθαι understood: see his discussion of the whole passage, *Arist. Stud.* II., pp. 21—24. "Discursive thought is the movement of this [the heart] or of some other part." It is true that τοιοῦτον (MSS.) and ἕτερόν τι might conceivably be accusatives of manner, τὴν καρδίαν being understood as the common subject of κινεῖσθαι. But there is no necessity to refer the motions exclusively to the heart, for A. is putting hypothetical cases by way of illustration, and the second alternative is not seriously intended by A. Possibly <τὸ> τοιοῦτον would be enough change. Cf. *Metaφh.* 1035 b 25—27, where, as he is only using an illustration, A. professes to be neutral as to the conflicting claims of heart or brain to be the seat of life: διαφέρει γὰρ οὐδὲν [for the present purpose] πότερον τοιοῦτον. The bodily change accompanying thought must be referred to the φάντασμα (431 a 14 sqq., 432 a 3—10, *De Mem.* 2, 453 a 14—31): in the last passage the bodily processes set up voluntarily in the effort to recollect something are said to continue automatically, as it were, after the voluntary effort has ceased, as is proved by the fact that something which we have been trying in vain to recollect suddenly flashes into the mind when we are no longer thinking about it.

b 9 τούτων δὲ... ἡ κατ' ἀλλοίωσιν. A remark thrown in, which does not bear on the main argument, though it serves to show that κινήσεις (b 6 above) must be taken in the generic sense, including φορὰ and ἀλλοίωσις as species of change. The beating of the heart and the flow of blood would be instances of φορὰ, that is κινήσεις κατὰ τόπον; while, when in fear the blood runs cold, this illustrates qualitative change (ἀλλοίωσις): und davon tritt das eine ein, indem etwas eine Ortsveränderung, das andere, indem etwas eine Qualitätsveränderung erfährt (Bz., l.c., p. 23): "and some of these states occur on the local movement, others on the qualitative change, of certain [bodily] parts (what parts and how moved does not concern us here)." The movements take place, not in the soul b 15 *infra*, but in the animal or composite substance of soul and body. They are clearly distinct from the psychical activities, of which they are the corporeal conditions. Both psychical activity and corporeal change belong as attributes to the composite substance, and the former, like the latter, is often, in default of a better term, designated κίνησις.

b 11. ποῖα δὲ καὶ πῶς, int. κινεῖται supplied from τινῶν κινουμένων. ἕτερός ἐστι λόγος, "is another question": cf. 419 a 7, 427 b 26. Philoponus imagines



that the *De Part. An.* or the *De Mot. An.* may be meant. τὸ δὲ λέγειν. Here begins the apodosis to b 5 εἰ γὰρ...in the judgment of Bonitz I. c., who accordingly adopts δὲ though only found in codd. S T.

b 13 βέλτιον γὰρ ἴσως...ἰ4 τὸν ἄνθρωπον τῇ ψυχῇ. We are dealing with certain ἔργα καὶ πράξεις, or πάθη καὶ ἔργα. We have to determine what is the ὑποκείμενον or logical subject to which they should be attributed. If it is absurd to predicate weaving and building of the soul, it can only be partially true to say that the soul pities or learns or thinks. The logical subject must be the same in the two cases, viz. the man, the ἔμψυχον ζῶον who pities, learns or thinks with, in, or by means of, his soul.

No ground is alleged, but the decision ultimately depends upon the solution of the question discussed in I., c. 1, particularly 403 a 3—b 19, whether any functions of the soul are independent of the body: whether in short the soul or any part of it is χωριστόν (cf. 403 a 10—12) or οὐσία τις ἐγγινομένη (408 b 18). In spite of the preference which A. avows for the more correct expression he goes on using the less correct form of ordinary language throughout the treatise and talks like other people (φαμέν γὰρ 408 b 1) of the soul as the subject of emotions, sensations and processes of thought, just as if he had never laid down this canon. But all the time he is aware that the variation concerns only the expression and not the thing meant. Cf. e.g. 431 b 2—6, *Eth. Nic.* 1174 b 17 αὐτὴν δὲ [int. τὴν αἰσθησιν] λέγειν ἐνεργεῖν, ἥ ἐν ᾧ ἐστί, μὴθὲν διαφερέτω.

b 15. τοῦτο δὲ μὴ, int. λέγειν. Our meaning must be carefully circumscribed. The man is the subject who pities or learns with his soul. To pity and to learn is to be moved (κινεῖσθαι 408 b 5 sqq.). But we must not imply that the movement goes on in the soul. Either it starts from the soul as efficient cause (ἀπ' ἐκείνης, cf. b 7 ὑπὸ τῆς ψυχῆς): or in sensation it starts from the external object and reaches to the soul (μέχρι ἐκείνης), i.e. to the αἰσθητικόν which is, as we shall see in II. 12, 424 a 27 sq., λόγος τις καὶ δύναμις τοῦ αἰσθητηρίου. This αἰσθητικόν undergoes a change, which, though not strictly either πάθος or ἀλλοίωσις, is often so described (417 b 16—19, taken with 417 b 5—7, 431 a 4—6). The common groundwork of this view of sensation as the transmission of a stimulus or impression through the body to the soul is to be found in Plato. Cf. *Phil.* 33 D ἐπὶ τὴν ψυχὴν, *Tim.* 45 D μέχρι τῆς ψυχῆς, 64 B ἐπὶ τὸ φρόνιμον, 67 B μέχρι ψυχῆς and *Theaet.* 191 D, E, the waxen block.

b 16. οἷον ἡ μὲν αἰσθησις ἀπὸ τωνδὲ, int. κινήσις ἐστίν. Ἀπὸ τωνδὲ=ἀπὸ τῶν αἰσθητῶν which are often called τὰ κινούμενα. The sensible object is the efficient cause; it communicates motion to the medium, and the medium to the sense-organ, 417 b 19—21, 426 b 29 sqq. Compare for sensation as κίνησις or ἀλλοίωσις 415 b 24 sq., 416 b 33 sq., 417 a 14 sqq., and for the mechanism assumed in the transmission of motion, e.g. 419 a 7—31, 431 a 17—20, 434 b 24—435 a 10.

b 17. ἡ δ' ἀνάμνησις. The subject of *De Mem.*, c. 2 is recollection and its relation to memory and imagination as understood by A.: see Zeller, *Aristotle* etc., *Eng. Tr.* II. 73 sqq., and Beare, *Greek Theories*, pp. 312—325. Recollection is the conscious reproduction of a memory; it belongs to man and is not shared by the brutes, for it involves a process of inference and deliberation: *De Mem.* 2, 453 a 8—14. To recall what we are in quest of is not always in our power (453 a 20), but the search for it is obviously intentional: herein differing from memory, i.e. the efficient cause is ὁ ἀναμνησκομένος, acting spontaneously, and this is here expressed by ἀπ' ἐκείνης. The process of recollecting is explained *De Mem.* 2, 453 a 22 ὁ ἀναμνησκομένος καὶ θηρεύων σωματικόν τι κινεῖ, ἐν ᾧ τὸ πάθος, and in fuller detail 451 b 10 sqq. In it what we are in search of is an

imagination; this A. defines as a *κίνησις*, the result, as he explains, of a previous sensation, itself a *κίνησις*, 428 b 10 sqq.

b 18. ἡ *μονάς*. A correction of *κινήσεις* to suit the particular case of the image recalled to the memory. As explained in the last note, the image is a survival from a past sensation (*ἀσθενὴς αἴσθησις*=decaying sense, *Rhet.* I. 11, 1370 a 28). That it should thus persist and remain is a condition necessary for memory and recollection. Cf. 425 b 24 sq., *note*, 429 a 4 διὰ τὸ ἐμμένειν [int. τὰς φαντασίας] καὶ ὁμοίας εἶναι ταῖς αἰσθήσεσι, *Anal. Post.* II. 19, 99 b 36 *μονὴ τοῦ αἰσθήματος*, *ib.* 100 a 2, 6, 15 sqq. *De Mem.* 2, 452 a 10, Them. 28, 17 H., 51, 23 Sp. εἰ δὲ μὴ *κίνησιν* τις λέγοι τὰ ἐγκαταλείμματα τῶν αἰσθητῶν, ἀλλὰ *μονὴν μᾶλλον καὶ ἡρεμίαν*, πρὸς γε τὸν παρόντα λόγον οὐδὲν διοίσει, *ib.* 28, 25 H., 52, 6 Sp. εἰ δὲ καὶ τὰς ἐνεργείας τις *κινήσεις* λέγοι, πρὸς τοῦτομα ὅπερ εἶπον καὶ πρότερον οὐ χρὴ φιλονικεῖν, διορίζεσθαι δὲ, ὅτι εἴπερ καὶ τὰ τοιαῦτα *κινήσεις*, ἀλλ' ἑτερόν γε εἶδος τοῦτο *κινήσεως*, ὅπερ καὶ αὐτὸς διαρρήδην ἐφεξῆς συγχωρεῖ. He cites 417 b 5—7, 12—15, 431 a 4—7. See also *Simpl.* 58, 33 sqq.

**408 b 18—29.** The man, we said, thinks and learns with his soul: more precisely, with his intellect, which is an immanent form, indestructible and exempt from suffering. True, the process of thinking becomes enfeebled by old age, but old age is due to bodily decay. Thinking, like loving and hating and remembering, should properly be attributed, not to the soul, but to the individual possessor of the soul, as such. Hence, too, it follows that, when this individual ceases to exist, his memory and love cease also.

Among the difficulties of the passage are (1) the anomalous position of *νοῦς* as *οὐσία* τις ἐγγνωμένη, when the composite substance of the animal already has a form, viz., its soul, 407 b 23 sq.; (2) the argument from the senses, which seems to prove too much; (3) the assumed distinction between *διανοεῖσθαι* and *νοεῖν* (cf. Them. 30, 24 sqq. H., 55, 19 sqq. Sp.), which appears to me quite arbitrary, since either verb may stand for the act of thinking in the individual; (4) the mention of functions not intellectual, memory and love, apparently in connexion with the intellect, if that is the meaning of *ἐκείνο*, b 26—28. But more probably *ἐκείνο*=soul, in contradistinction to *τοῦτο*=the body, τὸ ἐν φ. This use of the pronouns would be regular, for body is better known to us and from it we infer soul.

b 18. ὁ δὲ *νοῦς*. *Simpl.* 59, 14 ἡ δὲ ἀνθρωπίνη ψυχὴ, ἣν νοῦν καλεῖ. This suggestion would remove the first and the last of the difficulties just stated, but it is at variance with A.'s use of the term *νοῦς*: cf. 407 a 6 sqq., 429 a 22 sq., 28, 431 b 26 sq. The exact relation of the thinking part to the rest of soul is nowhere made perfectly clear: cf. 413 b 24—27, 429 a 10—12, b 16 sq., 431 b 17—19. *ἔοικεν ἐγγινεσθαι*. *Simpl.* 59, 16 δηλαδὴ τῷ σώματι, ἀλλὰ ποτὲ καὶ ὡς χωριστῇ, ὅπερ ἀλλαχοῦ φησιν ἐπεισιῶσαν, viz., *De Gen. An.* II. 3, 736 b 27 *λείπεται δὲ τὸν νοῦν μόνον θύραθεν ἐπεισιέναι καὶ θείον εἶναι μόνον*. Hence *ἔοικεν* expresses A.'s own conclusions objectively stated. Cf. 402 b 16, 403 a 8. The discussion in *De Gen. An.* II., c. 3 of the origin of life and mind has naturally excited no little interest, and strangely divergent views have been current respecting "the intellect which is introduced from outside" 736 b 27 sq., ὁ θύραθεν *νοῦς* 744 b 21 sq. (Cf. *De Insomn.* 2, 460 b 2 τοῦ θύραθεν αἰσθητοῦ, the external sensible.) See Grote, *Aristotle*, pp. 480—2, 2nd edition (II., pp. 220—223, 1st edition), Kampe, *Erkenntnisstheorie des Ar.* pp. 3—50; and on the other side Brentano, *Psychologie des Ar.* pp. 195—202 (cf. pp. 8—29), Hertling, *Materie und Form*, pp. 163—170. A judicious criticism will be found in Zeller, *Aristotle*, Vol. II. p. 6 *note* 2, 95 *note* 2, 96 *note* 1 and pp. 119—123 (Eng. Tr.). On p. 100, *note* 1, after citing 736 b 15—25, which concludes with the words

ὅτι μὲν τοίνυν οὐχ οἷόν τε πάσας [all parts of the soul] προϋπάρχειν, φανερόν ἐστιν... ὥστε καὶ θύραθεν εἰσιέναι ἀδύνατον, Zeller continues: "it is obvious that according to A. προϋπάρχειν and θύραθεν εἰσιέναι are inseparably connected, and that accordingly, if the latter is true of the Nous and of it alone, the former must also be true." In our treatise A. is not specially concerned with the question: any reference either to the mortality or immortality, the pre-existence or the post-existence, of the soul or any part of it comes in quite incidentally.

b 19. οὐσία τις. Simpl. 59, 17 οὐχ ὅτι μὴ αἱ ἅλλαι ψυχαὶ οὐσῖαι (πᾶσα γὰρ ζωὴ οὐσία), ἀλλ' ὥς θυλον ὑπάρχουσιν καὶ καθ' αὐτὴν ὑφεστώσαν. This εἰκὸς is in contrast with that of 403 a 8 sqq., where the conditional inference is (403 a 9) οὐκ ἐνδέχουτ' ἂν τοῦτ' [int. τὸ νοεῖν] ἄνευ σώματος εἶναι. Cf. 403 a 10—12 εἰ μὲν οὖν... χωριστή. The same attitude of reserve is maintained in the earlier chapters of Bk II., see especially 413 b 24—27, the solution being reserved for III. c. 5.

b 19. καὶ οὐ φθείρεσθαι, *vide inf.* b 25 ἀπαθές, b 29 βειότερόν τι καὶ ἀπαθές, 413 b 26 γένος ἕτερον, 27 αἰδίων, 430 a 17—25. The teaching of the *Metaphysics* is that εἶδος has the best right to be considered οὐσία, and that τὸ σύνολον or σύνθετος οὐσία ἐξ ὕλης καὶ εἶδους derives its title from the possession of εἶδος, which is eternal and immobile and does not come into being or cease to be like τὸ σύνολον, *Metaph.* 1033 b 5—19, 1039 b 20—27, 1043 b 14—23. In concrete things, whether products of nature or of art, the form is combined with, or immanent in, the matter. When the concrete thing perishes or ceases to exist as such, form and matter part company and the latter is resolved into its elements. The question, what becomes of the form, is mentioned and postponed in *Metaph.* 1043 b 18—21, 1070 a 13—18, 21—27. In both passages the view is implied that strictly the form of products of art does not survive the destruction of these products (unless it be identified with ἡ τέχνη, 1070 a 15). In the latter passage the instance of a possible survival of form as τότε τι 1070 a 14 (cf. χωριστόν, 1043 b 19) is the same as that given here in *De A.* viz. νοῦς: *ib.* 1070 a 24 εἰ δὲ καὶ ὑσπερόν τι ὑπομένει, σκεπτόν. ἐπ' ἐνίων γὰρ οὐδὲν κωλύει, οἷον εἰ ἡ ψυχὴ τοιοῦτον, μὴ πᾶσα ἀλλ' ὁ νοῦς· πᾶσαν γὰρ ἀδύνατον ἴσως.

b 19 μάλιστα γὰρ ἐφθίρετ' ἂν... 24 καὶ νόσοις. The argument appears to be from analogy: cf. 429 a 13 sq. The decay of the body through age does not imply decay of the sensitive faculty or sensitive soul and, if so, bodily decay does not imply a similar decay in the intellect. Not νοῦς itself, but that in which it resides, τὸ ἐν φῖ, is impaired in the same way as the senses suffer when the sense-organs are impaired temporarily by intoxication or permanently by disease. A. admits the fact that mental power decays as much as sight or hearing, 408 b 24 (*Pol.* 1270 b 40 διανοίας γήρας). Why, then, may we not similarly argue that the sensitive faculty is indestructible? Simplicius 60, 3 makes the inference depend on the fact that the mind is vigorous just when the body is enfeebled: τεκμαίρεται... ἐκ τοῦ ἀντικειμένου τῷ σώματι ἀκμάζειν αὐτὴν (int. τὴν λογικὴν ἐνέργειαν), if it does not grow strong and feeble along with the body, neither is it generated and destroyed with the body (*ib.* 60, 3—14). Cf. *Probl.* XXX. 5, 955 b 23 διὰ τί πρεσβύτεροι μὲν γινόμενοι μᾶλλον νοῦν ἔχοντες, νεώτεροι δὲ ὄντες θᾶπτον μανθάνοντες, where in the course of the discussion it is stated b 31 τὸν αὐτὸν τρόπον καὶ ὁ νοῦς τῶν φύσει οὐκ εὐθύς ἀλλ' ἐπὶ γήρας ἡμῶν μάλιστα παραγίνεται, καὶ τότε ἀποτελείται μάλιστα, ἂν μὴ ὑπὸ τινος πηρωθῇ, καθάπερ καὶ τὰ ἄλλα τὰ φύσει ὑπάρχοντα. In spite of 408 b 22 ὥστε, and the dogmatic tone of the sentence ὥστε... b 23 ἀλλ' ἐν φῖ, the sensitive soul would seem to be introduced simply by way of illustration and not to furnish an argument *a fortiori*. The difficulty with νοῦς is that, unlike sense, it has no special bodily organ: 429 a 27. Cf. 413 a 7 διὰ τὸ μηθενὸς εἶναι σώματος ἐντελεχείας. We

have no definite knowledge of corporeal movements associated with it, as with sensation and recollection.

b 20. ἀμαυρώσεως. This explains b 22 γῆρας, the enfeeblement or intellectual weakness of old age; cf. b 24 μαραίνεται. νῦν δ' ἴσως. *Ind. Ar.* 492 a 60 per voc. νῦν δέ id quod in re ac veritate est ei opponitur, quod per conditionem aliquam positum erat, 412 b 15, cf. 423 a 10, 425 b 9, 429 a 27. ὅπερ, elliptical: a second συμβαίνει must be understood, either before ὅπερ or after ἐπὶ τῶν αἰσθητηρίων. Contrast the form of the expression with 430 a 2. See *note* on καθάπερ 403 a 12.

b 22. τοιονδί, of a given kind, adapted for use: 412 b 11, 16, 27. τὸ γῆρας. Supply ἐστὶ or συμβαίνει. γῆρας is pregnant; age and its accompanying mental enfeeblement. *Vide supr.* ἀμαυρώσεως, 408 b 20.

b 23. ἄλλ' ἐν ᾧ, i.e. τὸ ἐν ᾧ, the substratum or ὑποκείμενον of which the soul is the form, in short, the living body. Written out in full it would run: ἀλλὰ τῷ πεπονηθέναι τι τὸ ὑποκείμενον ἐν ᾧ ἐστὶν ἡ ψυχὴ.

b 25. ἄλλου τινὸς ἔσω φθειρομένου. Steinhart, *Progr. von Schulhfortie*, 1843 and Bonitz, *Arist. Stud.* II. 3, p. 24 *note*, object that any corporeal decay must take place outside the immaterial νοῦς. "Das körperliche Organ, welches auch immerhin dies sein möge, wird doch natürlicherweise der geistigen Kraft gegenüber nicht als ein Inneres sondern als ein Äusseres zu bezeichnen sein" (Bz.). Νοῦς of course has no bodily organ (429 a 27) in the sense in which the eye and the ear are the organs of sight and hearing respectively. The expression of the text is intelligible, if ἔσω = "within the body" or if ἔσω = ἔσωθεν, when something distinct from νοῦς perishes from internal decay. Cf. *De Vita (De Iuvent.)* 4, 469 b 6—20, a passage which teaches that life depends ultimately upon a certain degree of heat in the central bodily organ, the heart or its analogue: (469 b 13) διὰ τῶν μὲν ἄλλων μορίων ψυχομένων ὑπομένει τὸ ζῆν, τοῦ δ' ἐν ταύτῃ [int. τῇ καρδίᾳ ἢ τῷ ἀνάλογον ψυχομένον] φθίρεται πάμπαν, διὰ τὸ τὴν ἀρχὴν ἐντεῦθεν τῆς θερμότητος [τῆς συμφύτου φυσικῆς] ἡρτῆσθαι πᾶσι. αὐτὸ δὲ ἀπαθὲς ἐστίν. Simpl. 60, 22 τὸ νοοῦν δηλαδὴ, understood from b 24, τὸ νοεῖν, the grammatical subject. Cf. *note* on 403 a 22. αὐτὸ = "in its own nature," viewed apart from its relation to the body in which it resides and which conditions its activity. See *note* on ἀπαθές, 429 a 15. Here and in b 29 *infra* "exempt from suffering" implies "indestructible."

b 26. ἐκείνου, int. τοῦ νοοῦντος, see on b 25 αὐτό. So I have translated it, following the traditional view. But it would be quite possible, and far more satisfactory, to understand it of the soul, τῆς ψυχῆς, both here and b 27, 28 *infra*; cf. b 15—17 *supra*, where ἐκείνη = the soul. τοῦδὲ τοῦ ἔχοντος ἐκεῖνο, viz. τοῦ ἐμψύχου σώματος, in so far, A. adds, as it contains the thinking faculty or, more probably, the soul. Cf. *note* on 403 a 4.

b 27. τούτου φθαιρομένου, explained by b 26 τοῦδὲ τοῦ ἔχοντος ἐκεῖνο. "This" means the particular σύνθετος οὐσία made up of body and soul, which ceases to be at death, as it began to be at birth. The present participle and present indicative express invariable coincidence, as in 408 a 28, b 9 sq.

b 28. μνημονεύει, int. τὸ μνημονεύον (i.e. the man himself): and similarly with φιλεῖ supply τὸ φιλοῦν. Cf. *note* on 403 a 22. To make νοῦς the subject of μνημονεύει, as some have done, implies that memory and love are functions of νοῦς as distinct from its individual possessor, and, further, that they belong to the thinking part of soul. ἦν might be taken, in spite of b 29 ἀπόλωλεν, to mean "is, as we saw," viz. b 13 sqq.

b 28. τοῦ κοινοῦ, i.e. τοῦ ἐκ ψυχῆς καὶ σώματος, *Ind. Ar.* 399 a 28 ea communio, quam κοινὸς significat, cerni potest in mistione plurium elementorum.

Cf. *Pol.* 1254 a 29 ὅσα γὰρ ἐκ πλείονων συνέστηκεν καὶ γίνεται ἐν τι κοινόν. Τὸ κοινόν=ἡ σύνθετος οὐσία ἐξ ὕλης καὶ εἶδους, *Μεταφρ.* 1043 a 29 δεῖ δὲ μὴ ἀγνοεῖν ὅτι ἐνίοτε λανθάνει πότερον σημαίνει τὸ ὄνομα τὴν σύνθετον οὐσίαν ἢ τὴν ἐνέργειαν καὶ τὴν μορφήν, οἷον ἡ οἰκία πότερον σημείον τοῦ κοινού...ἢ τῆς ἐνεργείας καὶ τοῦ εἶδους...καὶ ζῶον πότερον ψυχὴ ἐν σώματι ἢ ψυχὴ. It is unnecessary to refute Them. who is forced by exegetical exigencies to understand by this term ὁ παθητικὸς νοῦς: see, e.g., 105, 18—22 H., 194, 10—16 Sp. Or, again, those who, restricting φθειρομένου to the present life, explain τὸ κοινὸν ἀπόλωλε by saying that the old man neither remembers nor loves as he did in his youth: the man he was in youth he has already ceased to be.

b 29. *θειότερον.* Cf. *De Gen. An.* II. 3, 736 b 27 λείπεται δὲ [fort. δὴ] τὸν νοῦν μόνον θύραθεν ἐπεισεῖναι καὶ θεῖον εἶναι μόνον: οὐδὲν γὰρ αὐτοῦ τῇ ἐνεργείᾳ κοινωνεῖ σωματικὴ ἐνέργεια, 737 a 9 τὸ μὲν χωριστὸν ὃν σώματος, *ib.* II. 6, 744 b 21 καθάπερ οὖν εἰς τὴν αὐξήσιν ὁ θύραθεν ταῦτα ποιεῖ νοῦς, *Μεταφρ.* 1074 b 16 and *Eth. Nic.* X. 7, 1177 b 30 θεῖον ὁ νοῦς πρὸς τὸν ἄνθρωπον, where the comparison is, as here, between the individual and νοῦς in him, *ib.* 1177 a 16 τῶν ἐν ἡμῖν τὸ θειότατον. Τὸ θεῖον is joined with τὸ αἰεὶ 415 a 29, b 3.

b 30 ὅτι μὲν οὖν...31 ἐαυτῆς. This sentence resumes the conclusion reached 408 a 29 sqq. The whole passage 408 a 34—b 29 εὐλογώτερον...ἀπαθὲς ἔστιν is more or less of a digression, though of the first importance as rendering A.'s views more definite. He passes on to examine the latest form of the hypothesis that soul is the principle of motion, viz., that of his friend Xenocrates, the contemporary head of the Academy.

b 31. ὑφ' ἐαυτῆς, int. *κινεῖται*.

b 32 ἀριθμὸν...33 κινουμένῳ ἐαυτόν. Cf. 404 b 27—30, *Anal. Post.* II. 4, 91 a 35—b 1.

b 33. αὐτοῖς, i.e. τοῖς οὕτω λέγουσιν.

b 34. ἐκ τοῦ κινεῖσθαι, int. τὴν ψυχὴν, a pregnant expression for ἐκ τοῦ κινουμένην λέγειν: cf. *supr. note* on 405 b 26.

The criticism of Xenocrates extends from 408 b 32 to 409 b 18. His theory is open to attack, not only on the old grounds, because it represents the soul as in motion, but also on new grounds, because it represents the soul as a number. Throughout it is assumed that number means "sum-total of units," that what is true of the number is true of the component units.

**409 a 1—30.** A. objects: (1) that a unit in motion is inconceivable. What, he asks, is the moving cause, and how will the unit be moved? Suppose, in the first instance, that the unit is moved by itself, i.e. is at the same time moving and moved: this is impossible, since, as unit, it is without parts and differences [§ 16].

(2) that, since mathematicians hold a surface to be generated by the motion (ῥύσις) of a line and a line by the motion of a point, the movements of the soul ought strictly to be lines. For the unit becomes a point if it has position, and this condition is fulfilled by the number of the soul [§ 17].

(3) Subtract a number or a unit from a number and another number remains; but the cutting parted from the parent stem and the segments of worms continue to live, showing a soul which is specifically the same as that of the parent plant or the worm before division [§ 18].

A. next endeavours to reduce the self-moving unit to identity with the soul-atom of Democritus; and then to elaborate further objections. The reduction implies as above (a) that the number is a plurality of units, (b) that these units have position. It will then follow (4) that there is no difference between the units having position, of which the soul-number is composed, and the small

spherical soul-atoms of Democritus, for the latter might become points, and, as long as they remain a discontinuous quantity or aggregate, there will still be in this aggregate a factor which moves as well as one which is moved, whatever the size of the individual atoms. Similarly the units of which the soul as a number is composed will require a moving cause, i.e. a unit [or units] which, so far from being at the same time movent and moved, is movent only [§ 19]. Yet how can units differ except by position?

The units will be either the same as, or different from, the points in the body. (5) If different, they will occupy the same place as the points of the body: indeed there may be an infinite number of such units at a single point [of the animate body] [§ 20].

(6) if the units are not distinct from the points in the body and if the number which is the soul is the sum of these points, it follows that all bodies are animate [§ 21].

(7) Further, on this latter view it will be impossible to make soul separable from body. Soul is an assemblage of units having position, i.e. points, and the points of a body cannot be separated from the body, for geometry teaches that a line is not composed of points and consequently cannot be resolved into points any more than a surface into lines or a solid into surfaces, all three being limits or boundaries but not constituent parts [§ 22].

409 a 1. *μονάδα*. A number is a *πλήθος μονάδων*, *Metaφh.* 1053 a 30. Cf. 1039 a 12 *εἴπερ ἐστὶν ὁ ἀριθμὸς σύνθεσις μονάδων, ὥσπερ λέγεται ὑπὸ τινων*, 1085 b 22 *τὸ γὰρ πλήθος ἀδιαίρετων ἐστὶν ἀριθμὸς*, 1001 a 26 sq., 1089 b 1, 9. If the number moves, so also does each of its component units. *Philop.* 166, 10 sq., *Simpl.* 62, 19 *μεριστὸν γὰρ τὸ μεριστῶς ἐνεργοῦν* [i.e. *κινούμενον*], *ἀμερῆς δὲ ἡ μονάς*.

a 2. *ὑπὸ τίνος*. It is conceivable that the number or assemblage of units moves because (a) each unit is self-moved, or because (b) some units are movent only and others moved only. A. develops (a), leaving (b) for the moment out of sight, though it recurs below (409 a 15—18): *Simpl.* 62, 20 *οὔτε γὰρ ὑφ' ἐαυτῆς...24 οὔτε ὑφ' ἑτέρας*.

a 2. *καὶ πῶς*, int. *κινεῖται*. In any case this is distinct from the *πῶς χρῆ νοῆσαι* of the preceding line, which is merely a rhetorical way of affirming that the motion of the unit is inconceivable. But the exact meaning of the second *πῶς* is open to doubt. It cannot well refer to the species of motion (*ἀλλοίωσις*, *αὔξησης*, *φορά*: *Philop.* 166, 9), for it is absurd to predicate growth or qualitative change of units. If, however, the units are reduced to points (*vide infra*) it would be pertinent to ask whether they move with rectilinear or circular motion in space, *φορά* (*Philop.* 166, 8). But *Simpl.* (62, 26 sq.) interprets differently: *τὸ οὖν δεύτερον πῶς τῷ ὑπὸ τίνος συντεταγμένον δηλωτικὸν τοῦ μήτε ὡς ἔμψυχον μήτε ἑτεροκινήτως*, which he explains by the previous remark (62, 24—26) *ἡ γὰρ ἂν ἐνδοθεν, καὶ ἔμψυχος ἔσται· οὐδεμία δὲ μονάς ζωτικῶς ἐνεργεῖ· ἡ ἔξωθεν, καὶ ἡ ὥσει ἢ ἔλξει· τὸ δὲ ἀμερὲς οὐδύτερον οἶόν τε*. If this is right, *καὶ πῶς* virtually repeats the question *ὑπὸ τίνος*. *ἀμερῆς...οὔσαν*. On his own principles A. has shown, *Phys.* VI. 10, 240 b 8, *ὅτι τὸ ἀμερὲς οὐκ ἐνδέχεται κινεῖσθαι πλὴν κατὰ συμβεβηκός*. Cf. 241 a 6 *ἔτι δὲ καὶ ἐκ τῶνδε φανερόν ὅτι οὔτε στιγμήν οὔτ' ἄλλο ἀδιαίρετον οὐθὲν ἐνδέχεται κινεῖσθαι*. If, therefore, the soul-units are reduced to mathematical points (409 a 20—30), the difficulty is just as insuperable to A.

a 3. *κινητικὴ δὲ καὶ κινητῇ*, *Them.* 31, 10 H., 56, 23 Sp. *εἰ μὲν γὰρ ἐκάστη ἡμα* [int. *κινεῖ τε καὶ κινεῖται*] *πῶς ἀμερῆς καὶ ἀδιάφορος οὕσα κινητικὴ τε ἡμα ἂν εἴη καὶ κινητῇ*. An extended sensible thing, being divisible, may have both attributes in respect of different parts of itself. Cf. *Phys.* VIII. 4, 254 b 27—33 cited at the

end of *note* on 406 a 4, διχῶς. διαφέρειν δεῖ, Philop. 166, 12 ἐπειδὴ τὸ κινεῖν, καθὸ κινεῖ, ἄλλο τί ἐστὶ πρὸς τὸ κινούμενον, ἀνάγκη καὶ τὴν μονάδα αὐτὴν ἑαυτῇ διάφορον εἶναι [Philop. construes διάφορος with dative. ἑαυτῆς would have been more usual]. Thus the unit would cease to be a unit as defined.

a 3 ἔτι δ' ἐπεὶ φασι...5 γραμμαὶ ἔσονται. Them. 31, 15 H., 57, 3 Sp. στιγμῆς δὲ κίνησις γραμμὴν μὲν ποιεῖ, ζῶνι δὲ οὐ. This second objection, like the third, is hardly serious. Philop. (166, 26) διαπαίξει δὲ αὐτοὺς. *Anal. Post.* I. 32, 88 a 18 τὰς δ' αὐτὰς ἀρχὰς ἀπάντων εἶναι τῶν συλλογισμῶν ἀδύνατον, 88 a 31 ἕτεροι γὰρ πολλῶν τῷ γένει αἱ ἀρχαί, καὶ οὐδ' ἐφαρμόττουσαι, οἷον αἱ μονάδες ταῖς στιγμαῖς οὐκ ἐφαρμόττουσιν· αἱ μὲν γὰρ οὐκ ἔχουσι θέσιν, αἱ δὲ ἔχουσιν.

a 7. ἤδη πού ἐστι: Philop. 166, 33 λέγοντες οὖν τὴν ψυχὴν ἀριθμὸν ἐν σώματι εἶναι ὁμολογοῦσιν, ὥστε αἱ μονάδες τοῦ ἀριθμοῦ κείνται που· ἐν τῷ σώματι γάρ. If, then, these units are somewhere and have position, they can be treated as points, the only difference between the arithmetical unit and the geometrical point being that the one has not, and the other has, position. μονάς=στιγμή ἄθετος, and στιγμή (or σημείον)=μονὰς θέσιν ἔχουσα, *Μεταφρ.* 1016 b 24 sqq., esp. 29 τὸ δὲ μηδαμῇ διαιρετὸν κατὰ τὸ ποσὸν στιγμή καὶ μονάς, ἡ μὲν ἄθετος μονάς, ἡ δὲ θετὸς στιγμή. Cf. 1084 b 26 sq. However, the difference between arithmetical units and geometrical points as such is sufficient to constitute them the subject matter of separate sciences.

a 8. ἄλλος ἀριθμός. The remainder, in subtraction, is never the same number. Further, if one (μονάς) be subtracted, the remainder is unlike in species to the original number, odd if that was even, even if it was odd, odd and even being the species (εἶδη) of number. Cf. *Μεταφρ.* 1043 b 36—1044 a 2; I cite οὐδ' ἀπ' ἀριθμοῦ ἀφαιρεθέντος τινὸς ἢ προστεθέντος, ἐξ ὧν ὁ ἀριθμός ἐστιν, οὐκέτι ὁ αὐτὸς ἀριθμός ἐστίν ἀλλ' ἕτερος. Cf. Zeno's argument, *Μεταφρ.* 1001 b 8 sqq.

a 9. τὰ δὲ φυτὰ...Ἱη. These facts are mentioned again, 411 b 19 sqq. Cf. *Μεταφρ.* 1040 b 10—13.

a 10. τὴν αὐτὴν ψυχὴν ἔχειν τῷ εἶδει. The soul in the two segments is always specifically the same, whereas if it were a number we should expect it to be sometimes, if not invariably, of a different species. Philop. may well say 165, 28 ὁ δὲ Ἄρ., ὥς εἰώθειν, ἐλέγχει τὸ φαινόμενον τοῦ λόγου and (165, 21) οὐκ ἂν τις οὐδ' ἄκρω δακτύλῳ τῶν μαθημάτων γευσάμενος τοιαῦτα ἂν εἴποι (int. κατὰ τὸ φαινόμενον).

a 10. οὐθὲν διαφέρειν. Simpl. 64, 5 πρὸς τὸ ἀριθμὸν εἶναι. A sum of atoms or atomic points will constitute a number just as much as a sum of units.

a 11 καὶ γὰρ ἐκ τῶν Δημοκρίτου σφαιρίων...13 τὸ ποσόν. The effect will be to substitute discontinuous for continuous quantity, a sum of points without magnitude for an assemblage of globules which fill space. Them. 31, 22 H., 57, 12 Sp. εἴ τις ὑπόθοιτο τὰς Δημοκρίτου σφαίρας μηκέτι σφαίρας, ἀλλὰ στιγμάς, μόνον διὰ αὐτῶν τηροῖ τὸ ποσόν, Philop. 167, 21 ἔαν οὖν τὸ μέγεθος τῶν ἀτόμων ἀφέλῃ τις, ἔσονται στιγμαί...23 οὐδὲν δὲ τὴν ὑπόθεσιν Δημοκρίτου λυμάνεται τὸ ἀφελεῖν τῶν ἀτόμων τὸ συνεχές· οὐδὲ γὰρ διὰ τὸ συνεχὴ σώματα εἶναι ἔλεγεν αὐτὰ κωεῖσθαι, ἀλλὰ διὰ τὸ πλῆθος αὐτῶν τῇ ἀντωθήσει τῇ πρὸς ἄλληλα, because there could be no collision of atoms unless there were a number of atoms to collide. Similarly, Philop. continues, it is not because the units of Xenocrates are indivisible that the soul which is composed of them is in motion, but because they are the constituents of a discrete quantity or number, διότι ποσὸν ἦν τὸ ἐξ αὐτῶν, ὁ ἀριθμός. Simpl. 64, 2 κὰν γὰρ ἐκ σωματίων τινῶν ποιῇ τὸν ἀριθμὸν ὁ Δημοκρίτης, ἀλλ' ἐξ ἀδιαιρέτων διὰ ναστότητα καὶ ἔτι ἀδιαφόρων κατ' εἶδος καὶ τὴν ὑποκειμένην φύσιν. ἀριθμός οὖν κατ' ἀμφοτέρους ἡ ψυχὴ ἐξ ἀδιαιρέτων καὶ

ἀδιαφόρων...7 ἀρκεί γὰρ τὸ ποσὸν κατὰ πλῆθος λέγειν ἑκάτερον πρὸς τὸ ἔνια μὲν κινήτικα ἔνια δὲ κινούμενα ἐξ αὐτῶν ἐξ ἀνάγκης ὁμολογεῖν. By ποσὸν in a 13, 15 is meant διωρισμένον ποσόν: Simpl. 64, 10, Philop. 167, 33. Cf. *Metaφh.* 1089 b 34: "every number denotes a *quantum*," ποσὸν τι σημαίνει. The conversion of atoms into points will leave their number unaltered. Probably A. used ποσὸν here to avoid confusion with the number of the soul, to keep the view of Democritus distinct from that of Xenocrates. For the analogy between points and units as discrete cf. *Metaφh.* 1085 a 3 ἀφῆ μὲν οὐκ ἔστιν ἐν τοῖς ἀριθμοῖς, τὸ δ' ἐφεξῆς, ὅσων μὴ ἔστι μεταξύ μονάδων, οἷον τῶν ἐν τῇ δυάδι ἢ τῇ τριάδι. That is, the units in numbers do not come into contact, but have a fixed order of succession with nothing intervening, e.g. the two units in the number two or the three units in the number three follow such an order. Cf. 408 a 8. Points cannot be in contact any more than units: *Anal. Post.* II. 12, 95 b 5 ὥσπερ οὖν οὐδὲ στιγμαὶ εἰσιν ἀλλήλων ἐχόμεναι, though there is an infinity of such points in a line, 95 b 8 ὥσπερ οὖν γραμμὴ πρὸς στιγμὴν ἔχει, οὕτω τὸ γινόμενον πρὸς τὸ γεγονός. ἐνυπάρχει γὰρ ἅπειρα γεγονότα ἐν τῷ γινομένῳ. See also *Metaφh.* 1085 b 27—34. With μένη cf. *Metaφh.* 1061 a 32 μόνον δὲ καταλείπει τὸ ποσὸν καὶ συνεχές.

a 13. ἐν αὐτῷ, i.e. ἐν τῷ ποσῷ τῷ ἐκ τῶν σφαιρίων. This is ἀριθμὸς στιγμῶν, the sum-total of the unextended points to which the atoms have been reduced. Philop. 168, 3 calls it τὸ ὅλον σύστημα. τὸ μὲν κινοῦν τὸ δὲ κινούμενον. These words show that the previous τι must be a collective: there will be in the sum-total of such points (the soul) a part which causes motion and a part which is moved. Them. 31, 23 H., 57, 14 Sp. οὐδὲν κωλύει τὰς μὲν κινεῖν αὐτῶν, τὰς δὲ κινεῖσθαι, ὥσπερ εἰ σμικρὰ σώματα ἦσαν. Philoponus appeals to *Phys.* VII. and VIII., where A. has proved that it is impossible for the same thing, whether continuous or discrete, to cause motion and to be moved κατὰ τὸ αὐτό.

a 14. ὥσπερ ἐν τῷ συνεχεῖ, in that which is not discrete, but continuous, i.e. in an extended magnitude. Before the spherical atoms were reduced to points, each soul-atom and the soul (i.e. on the atomist theory, the mass or aggregate of spherical soul-atoms) might be described as συνεχές τι, an extended thing, possessed of physical coherence and continuity. The interstices of void would no more deprive it of this attribute than the holes of a sponge, the type to Democritus of all so-called solid bodies, explained by him as really aggregates of atoms "with much void between," even when to sense their texture is as impervious as that of steel. The argument implies that A.'s principles of mechanical motion as laid down in *Phys.* VIII. apply to all extended bodies of whatever size. Thus (ἐν τῷ συνεχεῖ) such an extended body, if it moves itself at all, must according to *Phys.* VIII. be divisible into κινοῦν τι and κινούμενόν τι, for he has just proved, *Phys.* VIII. 5, 257 b 26—258 a 27, that, if it is πρώτως αὐτὸ αὐτὸ κινοῦν, it does not contain a single part or a number of parts which are, like the whole, self-moved. The atoms of Democritus are such extended bodies, extremely—we might almost say, infinitesimally—small. A. takes the limiting case: he supposes the extremely small magnitudes to disappear, and, in place of so many atoms, we get so many points. He argues that the mechanical principles apply even in the limit. Because there was κινοῦν τι and κινούμενόν τι before, there will be κινοῦν τι and κινούμενόν τι after, the conversion into points. Thus A. is arguing, not from the atomist standpoint, but from his own doctrine of motion which made such an assumption necessary. Res continua vero si ipsa se ipsam moveat, deprehendi in eâ partem quae moveat et partem quae moveatur demonstratum est *Phys.* Θ. 5, 257 a 31 sqq. (Torstrik, p. 126.) Cf. second note on 407 a 6.

a 14. διὰ τὸ μεγέθει διαφέρειν ἢ σμικρότητι. Them. 31, 25 H., 57, 17 Sp. αἱ



μέν ἔσονται ψυχαί, αἱ δ' οὐ. ἀλλ' εἰ τὸν ἀριθμὸν φυλάττοιεν, ἡ σμικρότης γε αὐτὰς οὐδὲν κωλύσει: provided the sum be constant, A. thinks we may reduce the size of the atoms as much as we like.

a 15 διὸ ἀναγκαῖον...16 κινήσον τὰς μονάδας. The conclusion that in the hypothetical case the atomic points that are in motion will be necessarily moved by others is now applied to Xenocrates. The component units of the number which is the soul also stand in need of a moving cause, just as much as the soul-atoms of Democritus. But the attempt to remedy this deficiency encounters fresh objections. διὸ. Philop. 168, 1 ὅτι ἐκάτερος αὐτῶν διωρισμένον πᾶσιν ποιεῖ τὴν ψυχὴν αὐτοκίνητον· ὥστε εἰ τῶν ἀτόμων τῶν ἀριθμῶν οἱ μὲν κινούσιν, οἱ δὲ κινούνται, ἔσται τὸ ὅλον σύστημα αὐτοκίνητον, ὥσπερ καὶ τὸ ὅλον ζῶον λέγεται αὐτοκίνητον, καίτοι τοῦ μὲν κινούντος τοῦ δὲ κινουμένου. τὸ κινήσον. Simpl. 64, 12 ἄλλο τι παρὰ τὰς κινούμενας δηλαδὴ, ἐπεὶ καὶ ἐκάστη μονὰς καὶ τῶν Δημοκρετιῶν σφαιρίων ἕκαστον ἔσται ψυχὴ (i.e. *quid* soul-atom or *quid* soul-unit, it is soul).

a 16 εἰ δ' ἐν τῷ ζῳῳ...18 τὸ κινεῖν μόνον. Them. 31, 11 H., 56, 26 Sp. εἰ δὲ αἱ μὲν κινούσι τῶν μονάδων, αἱ δὲ κινούνται, οὐ τὸ σύστημα αὐτῶν ὅλον ψυχὴ, ἀλλ' εἴπερ ἄρα αἱ κινεῖσθαι μόνον ἐν τῷ συστήματι. If the number is an assemblage of units, some movent, others moved, it will resemble the ζῶον, which is also σύστημα ὅλον αὐτοκίνητον καίτοι τοῦ μὲν κινούντος τοῦ δὲ κινουμένου. But then it is the movent, not the moved, which is the soul of the animal. Hence the movent units, not the moved, in the number, constitute its soul. Philop. 168, 5 ἀλλ' ὥσπερ ἐν ζῳῳ τὸ κινεῖν ἢ ψυχὴ καὶ οὐ τὸ κινούμενον, οὕτω καὶ ἐπὶ τοῦ τῆς ψυχῆς ἀριθμοῦ οὐ πᾶς [int. ὁ ἀριθμὸς] ἔσται ψυχὴ ἀλλ' αἱ κινεῖσθαι μονάδες.

a 18 ἐνδέχεται δὲ...21 θέσις. This has been considered a new argument and ταύτην has been taken to replace τὴν ψυχὴν. But on the theory impugned it is the number or πλῆθος μονάδων and not any single unit which constitutes the soul: cf. a 25, 26. A. is in fact still pressing his last objection. The point just reached is that τὸ κινεῖν in the number corresponds to soul in the animal. Plainly in a 18—21 we are dealing with the number and not with the animal. If so, ταύτην which is the subject represents strictly τὸ ἐν τῷ ἀριθμῷ κινεῖν and not τὴν ψυχὴν, being attracted to the gender of the predicate μονάδα (cf. 404 a 25, ποίε): "how can this movent part be a unit?" That ταύτην is subject and not predicate seems to have been held by Them. 31, 27 H., 57, 19 Sp. μονάδας εἶναι τὴν ψυχὴν, Philop. 168, 18 εἰ οὖν, φησί, μονὰς ἢ ἐκ μονάδων ἐστὶν ἢ ψυχὴ, and Simpl. 64, 13 φησὶ δὲ μὴ ἐνδέχασθαι μονάδα εἶναι τὴν κινουσαν. Them. and Philop. are aware of the difficulty involved in equating ταύτην with τὴν ψυχὴν: the former evades it by tacitly substituting the plural μονάδας, the latter by a bold avowal 168, 18, μονάδα εἶπεν ἀντὶ τοῦ ἐκ μονάδων (cf. Soph. 30, 19 sq.). M. Rodier's version, "Et comment est-il possible qu'une unité joue ce rôle?", seems to imply that μονάδα is the subject. If one unit is movent and the rest of the units in the number are moved, how does the movent unit differ from the rest? If the units are converted into points, the only quality they acquire is position in space. So far from explaining the difference between those which are movent and those which are moved, this quality raises fresh difficulties. Philop. 168, 27 καλῶς δὲ εἶπε στιγμῆς μοναδικῆς. εἰ γὰρ ἡ μονὰς προσλαβούσα θέσω στιγμή γίνεται, αἱ δὲ μονάδες ἐξ ὧν ἡ ψυχὴ ἐν σώματι, στιγμαὶ ἄρα ἔσονται. ἐπεὶ οὖν οὐχ ἅπλως στιγμὰς ἔλεγον ἀλλὰ μονάδας, αὐτὸς δὲ δείκνυσι ταύτας στιγμὰς οὕσας, εἰκότως μοναδικὰς στιγμὰς εἴρηκεν. Cf. Simpl. 64, 13—19.

a 21 εἰ μὲν οὖν ἐστὶν ἕτερα...22 αἱ μονάδες. A. treats μονάδες and στιγμαὶ as convertible terms, and by αἱ ἐν τῷ σώματι μονάδες here he means not the soul-units but the bodily points, precisely, in fact, what he means by αἱ στιγμαὶ, καὶ

being explanatory. From a 7 we might indeed infer that soul-units, like the soul-number, have position in space, but it is extremely awkward to give ἐν τῷ σώματι a meaning at variance with that which the words bear a 25, a 26, b 6 sq. : and this awkwardness we can avoid if, as I have said, we understand μονάδες here to denote points of body, and the sentence to be elliptical, ἕτεραι requiring a supplement, "different [i.e. from the units of soul]." When used at the end of the sentence without any qualification αἱ μονάδες unquestionably means the units of soul. The Greek commentators are most careful to distinguish the soul-units from the corporeal points and reserve αἱ ἐν τῷ σώματι (or αἱ σωματικαὶ) μονάδες καὶ στιγμαὶ for the latter only: Them. 31, 30 sqq. H., 57, 24 sqq. Sp.; Simpl. 64, 23 sqq.; Philop. 169, 7 sqq.; Soph. 30, 22 sqq. A. merely assumes that soul is in body. Soul now is an assemblage of unitary points, some movent, others moved. But body itself is an assemblage of points. Either the two sets of points are different or they are the same. (1) Suppose that they are different, i.e. that the soul-units are distinct from the points in the body, the points which body as extended in three dimensions presents, whether it be animate or inanimate. If the soul is in body, then the space its units occupy must at least partially coincide with that occupied by the points of body. Spatial coincidence of soul and body is inevitable. We shall have somewhere in the body a point which is not only a point of the body but also a unitary point of the soul.

a 22. ἐν τῷ αὐτῷ, int. τόπῳ ταῖς ἐν τῷ σώματι, in the same space as the points of body, Philop. 169, 12 ἐφαρμόσουσιν αἱ τῆς ψυχῆς στιγμαὶ ταῖς τοῦ σώματος. Cf. 409 b 3 *infra* and for the full phrase *Μεταφῆ.* 998 a 14, 18.

a 23. καθέξει γὰρ χώραν στιγμῆς, int. ἐκάστη τῶν μονάδων, each of the soul-units which we have agreed to treat as points having position in space.

a 23 καίτοι...25 καὶ αὐτά. There will be no limit to such spatial coincidence of soul-points without magnitude. There may be an infinity of them in any given point of the body. Philop. 169, 14 εἰ δὲ μία ἐφαρμόξει ἑτέρα ἢ τῆς ψυχῆς τῇ τοῦ σώματος καὶ οὐδὲν πλείω τὸ ἐξ ἀμφοῖν, τί κωλύει καὶ πλείους τῆς ψυχῆς στιγμὰς τῇ αὐτῇ στιγμῇ τοῦ σώματος ἐφαρμόσθαι; μυρία γὰρ ἀδιαίρετα συντεθέντα μέγεθος οὐ ποιεῖ. A. regarded this coincidence of distinct points as absurd: see 409 b 4 sqq. It is further probable, in view of 409 b 2, that Philoponus (170, 19—28) and Simplicius (64, 26—34) are right in surmising an absurd consequence to be implied, which follows from this, viz. the possibility on this theory that, all psychical activities being concentrated at a single point of the body, at all other points the body might be virtually inanimate. But, as Simplicius remarks (64, 28), this consequence is not here developed. Cf. 427 a 5 τόπῳ δὲ καὶ ἀριθμῷ ἀδιαίρετον [int. τὸ κρίνον].

a 25. καὶ αὐτά, int. ἀδιαίρετά ἐστιν. Possibly this follows from the conception of τόπος as laid down in *Phys.* IV., cc. 1—5. Cf. *Phys.* IV. 4. 211 a 27—9. Each thing is equal in extent to the space it occupies. But axioms which hold for bodies in space can hardly be transferred to soul-units or points. Them. 31, 34 H., 58, 1 Sp. καὶ αὐτὰ συντιθέμενα διαίρετον οὐ ποιεῖ μέγεθος. According to Simplicius (64, 33) τόπος means the single point of the body, ὡς καὶ πάσας τὰς ψυχικὰς [int. στιγμὰς] ἐν μιᾷ εἶναι σωματικῇ, ἣν κοινότερον τόπον ἐκάλεσεν ὡς δεκτικὴν ἐκείνων. Philop. 170, 31 εἰ γὰρ ὁ τόπος τῶν ἀπείρων στιγμῶν τῆς ψυχῆς τὸ σημεῖον ἐστὶ τὸ τοῦ σώματος, τοῦτο δὲ ἀδιαίρετον, καὶ τὰ ἄπειρα δηλονότι σημεία τὰ ἐφαρμόσαντα τῷ σημείῳ τοῦ σώματος ἀδιαίρετα ἔσται· ὡς γὰρ ἂν ἔχη ὁ τόπος, οὕτω καὶ τὰ ἐν αὐτῷ· ὥστε ἐν σημείῳ ἔσται ἡ ψυχὴ, καὶ καθ' ἐν σημείῳ ἐμψυχον τὸ σῶμα.

a 25 εἰ δ'...27 τὰ σώματα; εἰ δὲ answers εἰ μὲν a 21. We now take the other alternative. Suppose (2) that the points in the body are the same as the units

whose sum is the soul. On this view there are not two sets of points. Soul-units and points of body are identical. In the words of 409 b 5, we deny *ὅτι διαφέρων τις ἀριθμὸς ἐγγίνεται καὶ ἄλλος τις τῶν ὑπαρχουσῶν ἐν τῷ σώματι στιγμῶν*. It follows that all bodies will be animate: the distinction between animate and inanimate disappears.

a 26. *ὁ τῶν ἐν τῷ σώματι στιγμῶν ἀριθμὸς*, i.e. *πλήθος*, sum-total. Philop. 171, 10 *ἐπαναλαμβάνει τὸν λόγον εἰς τὸ σαφέστερον*, Simpl. 64, 36 *ἢ κάλλιον φάναι τὸν ἀριθμὸν τῶν ἐν τῷ σώματι στιγμῶν εἶναι τὴν ψυχὴν*.

a 28. *καὶ ἄπειροι*. Simpl. (65, 2) thinks another absurd consequence implied by the addition of these words. *οὐ γὰρ ἐνεργεῖα ἀλλὰ δυνάμει ἐν τῷ σώματι, εἴπερ ἄρα, αἱ στιγμαὶ· ἄπειροι δὲ αἱ δυνάμει. διὸ οὐδὲ ἀριθμὸς τὸ ἐξ αὐτῶν πλήθος (πεπερασμένος γὰρ πᾶς ἀριθμός) πρὸς τῷ καὶ τὴν ψυχὴν δυνάμει ποιεῖν ἀλλ' οὐκ ἐνεργεῖα ἐν τοῖς ἐμψύχοις*.

a 28 *ἔτι δὲ πῶς...30 εἰς στιγμάς*; Death is the separation of the soul from the body, the ordinary view being taken for granted here as above (408 a 28).

But the sum-total of the points in the body is inseparable from the body, unless, in defiance of geometry, points are asserted to be the elements (*μέρη*) of which lines are composed and into which accordingly they may be resolved by separation. (If Xenocrates substituted *ἄτομος γραμμὴ* for *στιγμή*, we may perhaps see from *De Caelo* III. 1, 299 a 5—11 how he would have met this objection.) The truth is that points are merely limits (*πέρατα*) of lines, just as lines are the limits which bound surfaces and surfaces the limits which bound solid bodies. A. believes that these limits are inseparable from that of which they are limits: *Phys.* IV. 4. 212 a 30 *ἅμα γὰρ τῷ πεπερασμένῳ τὰ πέρατα*, *Metaph.* 1002 b 8—11 *ὁμοίως δὲ δηλὸν ὅτι ἔχει καὶ περὶ τὰς στιγμάς καὶ γραμμάς καὶ τὰ ἐπίπεδα· ὁ γὰρ αὐτὸς λόγος· ἅπαντα γὰρ ὁμοίως ἢ πέρατα ἢ διαυρέσεις εἰσὶν*, *Metaph.* 1090 b 5 *εἰσὶ δὲ τινες οἱ ἐκ τοῦ πέρατα εἶναι καὶ ἔσχατα τὴν στιγμὴν μὲν γραμμῆς, ταύτην δ' ἐπιπέδου, τοῦτο δὲ τοῦ στερεοῦ, οἷονταί κτέ.* Cf. *Tor.* VI. 4. 141 b 19—22, *Phys.* VI. 1, esp. 231 a 24 *ἀδύνατον ἐξ ἀδιαυρέτων εἶναι τι συνεχές, οἷον γραμμὴν ἐκ στιγμῶν, εἴπερ ἡ γραμμὴ μὲν συνεχές, ἡ στιγμὴ δὲ ἀδιαύρετον* (the proof goes on as far as 231 b 10 and holds for any *μέγεθος*), *De Caelo* III. 1, 299 a 6 *ἔπειτα δηλὸν ὅτι τοῦ αὐτοῦ λόγου ἐστὶ στερεὰ μὲν ἐξ ἐπιπέδων συγκείσθαι, ἐπίπεδα δ' ἐκ γραμμῶν, ταύτας δ' ἐκ στιγμῶν· οὕτω δ' ἐχόντων οὐκ ἀνάγκη τὸ τῆς γραμμῆς μέρος γραμμὴν εἶναι. περὶ δὲ τούτων ἐπέσκεπται πρότερον ἐν τοῖς περὶ κινήσεως λόγοις, ὅτι οὐκ ἔστιν ἀδιαίρετα μήκη*, where *πρότερον* probably refers to *Phys.* VI. 231 a 24, cited above. Xenocrates is also refuted *Phys.* I. 3, 187 a 1—10 (see Simpl. *ad loc.* especially pp. 138, 10 sqq., 140, 6 sqq.), and apparently *Metaph.* 1088 a 15, 1091 a 14, b 35, probably also in some parts of *Metaph.* M., cc. 8 and 9. Xenocrates as a Platonist affirmed the immortality of the soul. See Philop. 171, 16, Theodoret v. 23 [Diels, *Doxogr. Gr.* 392 t<sup>b</sup> 3], Olymp. in *Phaed.* p. 98, Finckh [*Doxogr. Gr.* 539 n<sup>b</sup> 3].

It may be remarked in passing that, if A. has once succeeded in reducing the units (of which according to Xenocrates soul is constituted) to mathematical points, it follows on his own principles that they cannot be moved of themselves *καθ' αὐτὰ* or independently. See *Phys.* VI. 10, where there is an elaborate proof *ὅτι τὸ ἀμερές οὐκ ἐνδέχεται κινεῖσθαι πλὴν κατὰ συμβεβηκός*. Cf. 241 a 6 sq. But it is highly improbable that either the substitution of points for units or the assumption that the number of the soul must be in space (409 a 6 sq.) would have passed unchallenged by Xenocrates. Cf. A.'s own admission that the ideas are not in space, *Phys.* III. 4, 203 a 9 *μηδὲ που εἶναι*.

## CHAPTER V.

**409 a 31—b 18.** Summary of the objections to the view of Xenocrates. It implies a plurality of points present in one and the same point, just as the corporeal view of soul implies that two bodies occupy the same space [§ 1], and further, on this view as on that of Democritus, the soul causes motion in the body because it is itself in motion [§ 2]. Moreover the theory under criticism is futile, for it gives no insight into the characteristic attributes of soul, such as reason, sense-perception, pleasure and pain [§ 3].

**409 a 31.** *συμβαίνει δέ.* The division of chapters is here unfortunate and needlessly interrupts the connexion of thought.

**a 31.** *καθάπερ εἵπομεν*, apparently in 408 b 33 sqq., where, however, it is not the difficulties arising out of the conception of motion, but those connected with the attribution of number to the soul that are said to be peculiar (*ἴδια*). A. is not here presenting a fresh objection to the conception of a self-moving number, but summing up the results of his previous criticisms. He claims (1) that the same consequences follow from that conception as from the theory which regards soul as a body of fine particles. The particular consequence of this kind adduced below is that soul and body occupy the same space (b 2 *εἴπερ... 4 ψυχῇ*). This will follow if the soul is a collection of points no less than if it is a collection of particles. Cf. 409 a 21 sqq. That the reference in *καθάπερ εἵπομεν* is not solely to the opening sentence of the criticism (408 b 32—409 a 1) seems almost certain, for it was only upon subsequent analysis that the conception of number yielded this result, viz., that soul and the body would occupy the same space. Diogenes of Apollonia and Heraclitus seem the best representatives of *οἱ σῶμά τι λεπτομερές τὴν ψυχὴν τιθέντες* (405 a 21—29).

**a 32.** *σῶμά τι λεπτομερές.* This quality was claimed by Diogenes for his element air (405 a 22), and may be presumed to belong to that of Heraclitus: cf. 405 a 27 *ἀσωματώτατον*. The chief representative, however, of this view is Democritus. From 404 b 30—405 a 13 it appears that this particular variety of opinion, viz. that the soul consists of a body of fine particles, might be adopted either by those who regarded soul as the moving principle (*τὸ κινητικόν*) or by those who considered it cognate with the elements, provided they made the elements corporeal. Democritus would come under both heads, a fact which bears upon the question of the genuineness of the words *ἴδιον τὸ ἄτοπον*.

**a 32 τῇ δ'...409 b 1 τὸ ἄτοπον.** A. claims (2) that Xenocrates is involved in an absurdity all his own, though it finds a counterpart in Democritus,—presumably one to which the supporters of the view that soul is a subtle corporeal element, as such, were not exposed. This absurd consequence is developed below (409 b 7—11, with which compare 409 a 10—18). Against Democritus the objection had previously been urged (406 b 15—25). With *κινεῖσθαι* supply *τὸ ζῶον* (cf. 409 b 7). The proper correlative to *ᾧσπερ...ψυχῆς* is omitted; it would have been *οὕτως ὑπὸ τοῦ ἀριθμοῦ κινεῖσθαι φάναι* (see below 409 b 7 sq.) if this clause had taken the same form as the preceding, but it is replaced, as the text stands, by *ἴδιον τὸ ἄτοπον*, to be taken as subject of *συμβαίνει*. Cf. 403 a 12 *καθάπερ, ποίε*.

**409 b 1.** *ἴδιον τὸ ἄτοπον.* Torstrik, in an admirable note (p. 126), contends that these words are spurious because (1) the explanation of animal motion impugned was not peculiar to Xenocrates, but was shared by him with Democritus, (2) the words might easily have been interpolated, owing to the construction of the sentence having been misapprehended, an infinitive seeming

to be required after τῇ δέ. It is easy, Torstrik thinks, to supply this by understanding λέγειν κινεῖσθαι. Such an ellipse is very common both in Plato and A. in clauses where a comparison is instituted. The first objection may be met in a way: we may reply that Democritus did not say the animal was moved by the number, and so far the conception of Xenocrates was peculiar to himself. But it is a poor case which admits of no better defence than this.

b 2. ἐν παντὶ τῷ αἰσθανομένῳ σώματι. These words mean "in every part of the sentient body," not "in every sentient body." The view is that sensibility is diffused all over the frame, and not lodged in any special part as the brain or the heart.

b 3. εἰ σῶμά τι, as assumed by almost all A.'s predecessors excepting Plato and his school: at any rate by οἱ σῶμά τι λεπτομερεῖς τὴν ψυχὴν τιθέντες.

b 4. τοῖς δ' ἀριθμὸν λέγουσιν, int. τὴν ψυχὴν.

b 5. πολλὰς στιγμὰς, int. ἀναγκαῖον εἶναι as shown 409 a 18—25. πᾶν σῶμα, "all body," i.e. everything which is corporeal: not to be taken as in παντὶ τῷ αἰσθανομένῳ σώματι just above (409 b 2). The inference was drawn above, 409 a 25 sqq. ψυχὴν ἔχειν. See 409 a 27. εἰ μὴ διαφέρων τις ἀριθμὸς ἐγγίνεταί, i.e. if the number which is the soul be not something other than the sum total of points in the body (αἱ ἐν τῷ σώματι στιγμαί, 409 a 25, 6), as A. goes on to explain καὶ ἄλλος...στιγμῶν. For ἐγγίνεται="supervenes," cf. 408 a 21 ἐγγίνεται τοῖς μέλεσιν.

b 7. συμβαίνει τε. The particle which, standing alone, is, according to Eucken, *De Ar. Dic. Rat.* p. 13, comparatively rare in *De A.*, joins this new sentence to b 2 εἴπερ γὰρ...7 στιγμῶν. συμβ. is parallel to ἀναγκαῖον (b 3). Cf. 410 b 7.

b 8. καθάπερ καὶ Δημόκριτον αὐτὸ ἔφαμεν κινεῖν, viz. 403 b 28 sqq., i.e. "in his theory." On this idiom see note on 405 a 26, συνίστησιν.

b 9. τί γὰρ διαφέρει σφαίρας λέγειν μικρὰς. See 409 a 10 sqq. The oxymoron in μονάδας μεγάλας is purposely grotesque (see note on 409 a 2). If the dimensions of the constituents make no difference at all, by all means let us have "large units" (=points) as well as small spheres.

b 10 ἀμφοτέρως γὰρ...11 τῷ κινεῖσθαι ταύτας, the round atoms of Democritus or units of Xenocrates: cf. 403 b 24—31, 404 a 5—9. These words show clearly what the objection taken at the beginning of the chapter, 409 a 32 sq., really is. A. had criticised in 409 a 15 sq. the absence of a moving cause for the units of Xenocrates, which is exactly parallel to the complaint he makes against the Atomists. *Μεταφῆ.* 985 b 19 περὶ δὲ κινήσεως, ὅθεν ἢ πῶς ὑπάρχει τοῖς οὖσι, καὶ οὗτοι παραπλησίως τοῖς ἄλλοις ῥαθύμως ἀφείσαν. With τῷ κινεῖσθαι ταύτας cf. 403 b 29—31, 406 b 20—22.

b 11. τοῖς δὴ συμπλέξασιν εἰς τὸ αὐτὸ. Cf. 404 b 28 sqq.

b 12. συμβαίνει. Cf. *infr.* 410 b 4. *Ind. Ar.* 713 b 38 inde (a concludendi necessitate) συμβαίνει usurpatur ubi factis ex aliqua hypothesis conclusionibus ipsa hypothesis refutatur. ita συμβαίνει usurpatur ubi concludendo aliorum philosophorum placita refutantur. Cf. *Μεταφῆ.* 989 a 22 and Bonitz *ad loc.*

b 13 οὐ γὰρ μόνον...14 συμβεβηκός. Such a theory affords no help in either of the two divisions of our task. Here the point seems to be: "A self-moving number can be no proper description of what soul is, of its essence, nor yet such a characteristic or property of soul as will contribute to a better definition of it." Cf. again 402 b 16 sqq.

b 14. δῆλον δ' εἰ τις ἐπιχειρήσαιν. Cf. the phrase φανερώτατον δ' εἰ τις ἀποδοῦναι πειραθείη in 408 a 3, where, as here, it is τὰ πάθη καὶ τὰ ἔργα τῆς ψυχῆς to which reference is made.

b 16. λογισμούς, "processes of reasoning." In λογίζεσθαι and its derivatives the chief element is that of calculation. The word λογισμός is often used, like the English "reflection," to denote what is more precisely expressed by διάνοια. Cf. *infr.* 415 a 8, where λογισμός is explained by διάνοια. In *Μεταφῆ.* 980 b 28 λογισμός is co-ordinated with τέχνη, as distinguished from ἐμπειρία.

b 17. πρότερον. It is more probable that the reference is still to 402 b 25—403 a 2 than that it is either to 406 a 26 sq. or 408 a 3 sqq.

b 18. ἐξ αὐτῶν, int. τῶν λεγομένων. The plural after b 15 ἐκ τοῦ λόγου τούτου need cause no surprise. This gives a satisfactory sense: it is not easy even to surmise these attributes of soul (λογισμοὺς etc.) from such a definition.

b 19. τριῶν δὲ τρόπων...ὀρῶνται τὴν ψυχὴν. Cf. *note* on 405 b 11. Of the three modes, two only are given in this sentence. The third is introduced by λείπεται δέ (409 b 23). This is obviously the point where a new chapter should have begun.

b 20 οἱ δὲ σῶμα...21 τῶν ἄλλων. Here it is quite plain that ἀσωματότατον is another way of saying λεπτομερέστατον. The theories of soul which A. has in view make it identical with an ἀρχή which strictly is not incorporeal at all. In some of these theories the other simple bodies or elements are derived from the ἀρχή by σύγκρισις only. See *Μεταφῆ.* 988 b 34 sqq. This mode of γένεσις would apply to the air of Diogenes of Apollonia and to the fire of Heraclitus. The Atomists, however (cf. 405 a 11 sqq.), refused to admit any qualitative change in σῶμα, but derived all varieties in concrete things from the different shape, order and position of the atoms: Them. 32, 34—37 H., 59, 23—26 Sp., Philop. 175, 5—19, Simplic. 66, 6—18.

**409 b 23—411 a 7.** The greater part of the chapter [§ 5—§ 16, 409 b 23—411 a 7] is devoted to a criticism of the third theory, which, starting with the functions of perception and knowledge, derives the soul from the elements. On this theory soul knows and perceives because it is compounded of the elements, and it is further assumed that like is known by like. To this it is objected: (1) that the great majority of concrete things are not single elements but compounds [§ 5], and, even if the elements are present in the soul, this is not true of the particular compound or of the formula by which it is determined [§ 6]. (2) Further, applying the scheme of the categories to the term Being, what, we ask, are the elements from which the soul is derived? Are quantity and quality included, as well as substance? If they are not in the soul, how can the soul know them? If they are, the soul must itself be a quantity, quality and substance [§ 7]. (3) Again, if like knows like, it cannot, as Empedocles held, be unaffected by like [§ 8]. (4) On Empedocles' theory the corporeal tissues composed of earth, like hair and sinews, should strictly have perception of their like, i.e. earthy objects, but this is contrary to fact [§ 9]. (5) Empedocles is bound to admit ignorance on a large scale, e.g. the sphere which he calls God cannot know Strife, for in it alone of all things strife is not present [§ 10]. (6) It is a consequence of Empedocles' theory that soul should be found everywhere, for in all things there are present one or more of the elements, and therefore the knowledge and perception which the presence of the elements implies [§ 11]. (7) And yet since these elements are material elements, there is further need of a unifying cause, and this will be the main thing, such superior importance being however inconsistent with the priority which Empedocles ascribes to the elements [§ 12]. (8) The theory under examination, like that which attributes motion to the soul, fails to apply to all forms of soul. Just as plants and some animals are stationary, so plants are devoid of perception, and many animals of reason [§ 13]. (9) Again plants and

some animals do not respire, and so the Orphic theory that soul enters from the external universe in the act of respiration is untenable [§ 15]. (10) Nor is it necessary to compound the soul of all the elements: as the knowledge of contraries is one, it will be sufficient to take one only of a pair of opposite elements [§ 16].

b 23 *λείπεται δ' ἐπισκέψασθαι...24 αὐτὴν εἶναι*. The criticism of these theories is accompanied by a fuller exposition, for the preceding notice (404 b 8—27) merely established the fact that such views were held by Empedocles and Plato. *πῶς λέγεται* means "in what sense the soul is said" to be "composed of," or "derived from," the elements. The phrase *ἐκ τινος εἶναι*, which has many meanings, would bear either interpretation. See *Metaph.* Δ., c. 24; also 1044 b 24 sqq., 1092 a 23 sqq. One main distinction is that sometimes the elements remain in the product or derivative (*ἐκ τινος ὡς ἐνυπάρχοντος*), sometimes they do not (*ἐκ τινος μὴ ἐνυπάρχοντος*). Thus by *μείξις* a compound is generated quite distinct from its components. So Plato, *Tim.* 35 A, B: the compound soul is quite distinct from its elements, Same, Other, Being, just as Being is distinct from Same and Other. So, too, bone is a wholly different substance from the earth, water and fire, of which, according to Empedocles, it is compounded (410a 2 sqq.).

b 24. *λέγουσι μὲν γάρ, int. τὴν ψυχὴν ἐκ τῶν στοιχείων εἶναι. ἢ αἰσθάνηται τε τῶν ὄντων καὶ ἕκαστον γνωρίζῃ, int. ἡ ψυχὴ*. Here again, as above 409 b 8 (*Δημόκριτον αὐτὸ ἔφαμεν κινεῖν*), must be understood "according to the theory." They put forward the theory, not, of course, in order that the soul may perceive reality, but in order that its perception of reality and knowledge may be explained.

b 25 *συμβαίνειν...26 τῷ λόγῳ, int. ὃν λέγουσιν (or ποιοῦνται)*, the theory which they put forward.

b 26 *τίθενται γὰρ...27 τὰ πράγματα τιθέντες*. The assumption underlying all these views is that like knows like. See for Empedocles 404 b 13—15, for Plato 404 b 17, for Diogenes of Apollonia 405 a 23, for Heraclitus 405 a 27 sqq., and generally of all theories of this kind 405 b 13—19. If the soul consists of the elements, it will be capable of knowing all things: Them. 33, 4 H., 60, 3 Sp. *διὰ τοῦτο ποιοῦσιν αὐτὴν ἐκ τῶν στοιχείων, οἰόμενοι πάντα αὐτὴν οὕτω τὰ πράγματα γνωρίζειν*. As A. puts it, they supposed that the assumption "like knows like" involved the identification of the soul with all the things which it knows. Cf. for *πράγματα* 404 b 18, 25, 27.

b 28. *οὐκ ἔστι δὲ μόνα ταῦτα*. Grammatically *ταῦτα* should refer to *τὰ πράγματα*, which is impossible. It must be *τὰ στοιχεῖα* mentioned 409 b 23, 24. *ἔστι* is a verb of complete predication=exists.

b 29. *τὰ ἐκ τούτων=τὰ ἐκ τῶν στοιχείων*, the things compounded of the elements. The argument is this: You have to account for the fact of the perception by soul of e.g. rocks, trees, animals, all of which, even if regarded as merely modifications of an assumed first principle or principles, are certainly, in their present state, dissimilar from it, and therefore, *ex hypothesi*, from soul itself: Them. 33, 5 H., 60, 4 Sp. *εἰ μὲν οὖν τὰ στοιχεῖα μόνα ἦν τὰ ὄντα, καλῶς νῦν δὲ πολλῶ πλείω τὰ ἐκ τῶν στοιχείων*.

b 30. *ἔστω=ἐξέστω*. The imperative is an emphatic concessive, "licet," cf. *Metaph.* 1077 b 1.

b 31. *σύνολον*. The concrete whole is A.'s favourite term for a particular individual thing, e.g. Callias is such a whole, in which soul as form and body as matter are united. For the form of the word cf. *συναμφοτέρον*. On the theory of Empedocles such concrete things are compounds of his four elements (410a 1 *σύνθετα*).

410 a 1. οὐ γὰρ ὅπως οὖν, non qualibet ratione, not if taken at random, in any casual way. τὰ στοιχεῖα τούτων ἕκαστον, int. ἐστὶ. By τούτων are meant the compounds or derivatives.

a 2. ἀλλὰ λόγῳ τινὶ καὶ συνθέσει. The dative is causal, "in virtue of a definite ratio and arrangement," i.e. it is because the elements are combined in certain proportions and arranged in a certain way that each concrete thing comes to be: *Metaph.* 1012 b 25—31. See also the second note on 408 a 24. Cf. below 410 a 8 and 407 b 32 sq., 408 a 6 sqq. with notes. In c. 4 λόγος τῆς μείξεως and σύνθεσις are treated as exclusive rather than as complementary. In 408 a 18—23, the section which deals with Empedocles, λόγος (int. τῆς μείξεως) only is mentioned. However, in 408 a 24 μείξις apparently stands for both modes of combining, when the parts combine without alteration, as well as when their distinctive character is lost by their being fused or blended in the new whole. Here also, as bone is an example and καὶ explicative, σύνθεσις must include the latter mode as well as the former, cf. *De Caelo* III. 2, 300 b 25—30.

a 3. Ἐμπεδοκλῆς. This passage, *frag.* 96 D [211—214 K], is quoted also by Simplicius in *Phys.* II. 2, p. 300, 21 sqq., who gives the further line Ἀρμονίης κόλλησιν ἀρρηότα θεσπεσίηθεν and for εὐστέρνοις of our text substitutes εὐτύκτοις. Reference is made in *Metaph.* 993 a 17 sq. to the passage for the same purpose as here, viz. to show that the composition of bone is determined by the proportions subsisting between its constituent elements.

a 4. χράνοισιν. Empedocles is apparently thinking of the hollows of the earth, where in geologic ages, as we should say, he must have imagined bones, like other tissues, to have been gradually formed when the reign of Strife was over. Cf. *Simpl.* 68, 8 'χόανα' δὲ καὶ παρὰ τῷ ποιητῇ (*Hom. Il.* XVIII. 470), ἐν οἷς ἡ τῶν μιγνυμένων γίνεται κράσις, ἀγγεῖα... ἃ καὶ 'εὐστερνα' ὡς πλατέα διὰ τὸ χωρητικὸν καλεῖ, *Philop.* 177, 32—178, 1.

a 5. νῆστιδος αἰγλῆς. These words have caused some perplexity. From *frag.* 6, 3 D [57 K] of Empedocles we gather that Νῆστις, like Ζεὺς, Ἥρα and Αἰδωνεύς, was a personification of one of the elements, viz. elemental water or moisture. It seems impossible that αἰγλῆς should, as M. Tannery supposed (*Pour l'histoire de la science hellène*, p. 333), be an adjective = αἰγλήσεως: and though νῆστιδος might quite possibly be an adjective, it is more probably a substantive here as in the other passage. There is, however, no difficulty in taking it as genitive dependent on αἰγλῆς, "brightness of water" is parallel to ἰς ἀνέμοιο. *Simpl.* and *Philop.* strangely understand two elements, air and water, to be meant, each contributing one eighth: *Simpl.* 68, 10 μίγνυσσι δὲ... ἐν μὲν ἀέρος ἐν δὲ ὕδατος ἃ δὴ ἄμφω 'νῆστιν αἰγλῆν' προσαγορεύει, νῆστιν μὲν διὰ τὸ ὑγρὸν ἀπὸ τοῦ νάειν καὶ ρεῖν, αἰγλῆν δὲ ὡς διαφανῆ, *Philop.* 178, 1—4.

a 7 οἱ λόγοι... 8 καὶ ἡ σύνθεσις. Cf. 410 a 2. The combining proportions are as necessary to knowledge as the materials combined. In his own technical language A. would say that for knowledge the formal cause is as important as the material cause, since we know a thing only when we know its causes. Cf. *Metaph.* 983 a 24 sqq., 993 a 15—22, *De Part. An.* I. 1, 642 a 18—28.

a 8. γνωρίει γὰρ ἕκαστον, int. τῶν ἐν τῇ ψυχῇ στοιχείων [this is the subject], τὸ ὅμοιον τὸ ἐν τοῖς πράγμασιν [this is the object].

a 9. οὐθέν, int. γνωρίει. οὐθέν is the subject. There will be nothing in the soul to cognise concrete things. εἰ μὴ καὶ ταῦτ' ἐνέσται. That ταῦτα = bone and man is clear from what follows. The elements being supposed in the soul, the addition of οἱ λόγοι καὶ ἡ σύνθεσις (410 a 8) is required to convert them into particular things.

a 11. εἰ ἐνέστιν ἐν τῇ ψυχῇ λίθος. Cf. 431 b 29. Some such crude assump-



tion is at the basis of the earlier theories of perception. The pores of Empedocles are channels intended to facilitate the entrance of emanations, ἀπορροαί, from the object perceived. So, too, Democritus explained all perception by images (δείκελα=εἰδωλα) given off by the object and conveyed through the body to the equally material soul.

a 12. τὸν αὐτὸν δὲ τρόπον, int. ἔχει. From instances of concrete things (οὐσίαι) A. passes to qualities, or instances of τὰ καθόλου. He might have gone on to quantities, relations and the other appendages of substance.

a 13. ἔτι δὲ πολλαχῶς λεγομένου τοῦ ὄντος. It was conceded at 409 b 29 that the soul knows ἐξ ὧν ἐστὶ τὰ πράγματα. But do such elements exist? and what are they? The distinction of the categories is ultimate for A., and there can be no principles or elements common to them all.

a 14. σημαίνει γὰρ, int. τὸ ὄν. Cf. *Metaφh.* 1017 a 7, 22—24. See note on 402 a 23 τῶν γενῶν.

a 15. πότερον ἐξ ἀπάντων ἔσται ἡ ψυχὴ ἢ οὐ; Are we to say that the soul is composed of, or derived from, all of these or not?

a 16. ἀλλ' οὐ δοκεῖ κοινὰ πάντων εἶναι στοιχεῖα. This is A.'s own conviction, frequently expressed. Cf. *Metaφh.* 992 b 18—993 a 10, 1070 a 31—b 10, 1088 a 22—34. Similarly, there are no common principles from which all truth can be deduced, *Anaλ. Post.* I. 32, 88 a 36 ἀλλ' οὐδὲ τῶν κοινῶν ἀρχῶν οἶόν τ' εἶναι τινας, ἐξ ὧν ἀπαντα δειχθήσεται.

a 17. ἀρ' οὖν ὅσα τῶν οὐσιῶν, int. στοιχεῖά ἐστιν. Vahlen, *Beiträge* IV. 419, *De arte poetica*<sup>3</sup>, p. 271, explains differently. He compares ὅσα τῶν οὐσιῶν with his own readings of *Poet.* 1461 a 27 ὅσα τῶν κεκραμένων=all mixed drinks, and *Rhet.* II. 8, 1386 a 5 ὅσα τε γὰρ τῶν λυπηρῶν καὶ ὀδυνηρῶν. For the partitive genitive used predicatively see note on 402 a 1. *Ind. Ar.* 149 b 2 sqq. cites *Pol.* 1339 a 18 ταῦτα γὰρ καθ' αὐτὰ οὔτε τῶν σπουδαίων, ἀλλ' ἡδέα. I know no example introduced by ὅσα, for those which Vahlen (IV. 419, cf. *Beiträge* II. 271) supposed that he could adduce, viz. *Rhet.* II. 8, 1386 a 5, *Poet.* 25, 1461 a 27 quoted above, are elusive, as they rest upon his own emendation or manipulation of the text, in which subsequent editors decline to follow him. ἐκ τούτων μόνον, int. ἔσται ἡ ψυχὴ: or, as Them. (33, 31 H., 61, 9 Sp.) puts it more briefly, ἐκ μόνης τῆς οὐσίας (int. ἡ ψυχὴ ἐστι). The first category, substance, is contrasted with all the rest. Let us suppose, then, that the elements in the soul are the elements of substances only. To this the reply is that the soul will in that case know substance but will not know any of the other categories. πῶς οὖν γινώσκει, int. ἡ ψυχὴ. It will be impossible for the soul, which has in it the elements of substance only, to know the other categories.

a 18 ἢ φήσουσιν...19 συνστάναι. To escape from the last conclusion the advocates of the theory must admit that the elements of which the soul is composed include the elements of the other categories besides those of substance.

a 20. ἔσται ἄρα ποσὸν καὶ ποιὸν καὶ οὐσία, int. ἡ ψυχὴ. Then these elements of which the soul consists will include quantity, quality and substance; presumably also, although A. does not say so, ἔδαι ἀρχαί of the other categories.

a 20 ἀλλ' ἀδύνατον...21 μὴ ποσόν. If the elements of soul are elements of quantity, the soul of which they are the elements will be quantity, not substance. The refutation is so elliptical that the final steps are uncertain. It may be left for us to infer similarly that soul is quality and not quantity or substance, and again that it is substance and not quality or quantity, it being impossible to reconcile these inferences. Belger, by transposition, made the final step the preceding sentence, hence the soul will be [at the same time] quantity, quality and substance. A. of course holds the soul to be οὐσία. He might fairly argue that

those who made it σύνθετον ἐκ τῶν στοιχείων held the same. Cf. *Metaph.* 1029 a 15 sq. τὸ γὰρ ποσὸν οὐκ οὐσία· ἀλλὰ μᾶλλον ᾧ ὑπάρχει ταῦτα πρῶτον, ἐκεῖνό ἐστιν ἢ οὐσία.

a 21. τοῖς δὲ λέγουσιν ἐκ πάντων, int. τῶν στοιχείων εἶναι τὴν ψυχὴν.

a 23. τὸ φάναι μὲν ἀπαθὲς εἶναι τὸ ὅμοιον ὑπὸ τοῦ ὁμοίου. μὲν is displaced, for αἰσθάνεσθαι δὲ is also dependent upon φάναι: *Ind. Ar.* 454 a 20 μὲν interdum non ei additur vocabulo, in quo vis oppositionis cernitur. The physical doctrine that like cannot act upon like (cf. 416 a 32) is mentioned *De Gen. et Corr.* I. 7, 323 b 1 περὶ δὲ τοῦ ποιεῖν καὶ πάσχειν λεκτέον ἐφέξης. παρειλήφμεν δὲ παρὰ τῶν πρότερον ὑπεναντίους ἀλλήλους λόγους. οἱ μὲν γὰρ πλείστοι τοῦτο γε ὁμονοητικῶς λέγουσιν, ὥς τὸ μὲν ὅμοιον ὑπὸ τοῦ ὁμοίου πᾶν ἀπαθὲς ἐστί διὰ τὸ μηδὲν μᾶλλον ποιητικὸν ἢ παθητικὸν εἶναι θάτερον θατέρου...τὰ δ' ἀνόμοια καὶ τὰ διάφορα ποιεῖν καὶ πάσχειν εἰς ἀλλήλα πέφυκεν. This was the opinion of Empedocles, who made his four elements qualitatively different and (unlike A.'s four ἀπλᾶ σώματα) immutable. The opposite view, viz. that like acts upon like, was held by the Atomists, who recognised no qualitative distinctions in matter, i.e. in the atoms, *ib.* 323 b 10—15 Δημόκριτος δὲ παρὰ τοὺς ἄλλους ἰδίως ἔλεξε μόνος κτέ. Though Theophr. *De Sensibus* § 49 (*Doxogr. Gr.* 513, 10—15) professes to doubt whether they explained sensation τοῖς ἐναντίοις ἢ τοῖς ὁμοίοις, the latter assumption is the true one, and is confirmed by Theophr. himself, § 50, where in an abstract of the theory of vision according to Democritus he reports him as saying: τὰ γὰρ ὁμόφυλα μάλιστα ἕκαστον γνωρίζειν. In fact, both Democritus and Anaxagoras (405 b 14, 19), though taking opposite sides, were consistent in applying their theory of physical change to the particular case of perception: the former said like acts upon like and like is known by like; the latter said that which acts is unlike that which is acted upon, and that which is known is unlike that which knows. Empedocles, like all the rest, is open to the charge of inconsistency. The two conflicting views reappear in the discussion of nutrition, 416 a 29—b 9.

a 24. αἰσθάνεσθαι. For perception it is enough to refer to 404 b 13 γαίῃ μὲν γὰρ γαίαν ὁπώπαμεν κτέ. γινώσκειν, int. τὸν γινώσκοντα. For knowledge the instrument, τῷ ὁμοίῳ, is probably the soul. Cf. above 409 b 26 with *note*.

a 25 τὸ δ' αἰσθάνεσθαι...26 καὶ γινώσκειν. Here, and in the similar passages 424 a 1, 427 a 20, 429 a 14, the question arises whether the indefinite τι is in agreement with the infinitive taken as a noun, or is the accusative governed by πάσχειν. The former construction is preferred by some editors in *Eth. Nic.* 1142 a 31 τὸ γὰρ βουλευέσθαι ζητεῖν τι ἐστίν. But the evidence of 424 b 16, 17 seems to me decisive in favour of the alternative view, at least here and in 424 a 1: cf. also 408 b 23. The difference of construction hardly affects the meaning, "to suffer something" being obviously "a mode of suffering." The common view was that in sensation the percipient is passive. A. starts from this in his own discussion (II., c. 5). There is little evidence as to the opinion of Empedocles about knowledge, but he doubtless assimilated it to sense-perception: see Theophr. *De Sensibus* §§ 10, 11 [*Doxogr. Gr.* 502, 7 sqq.].

a 28. ὡς τοῖς σωματικοῖς στοιχείοις ἕκαστα γνωρίζεται. Empedocles makes the corporeal elements present in living things the instruments of cognition (in the verses cited 404 b 13—15). Cf. 427 a 26—29.

a 29. καὶ πρὸς τὸ ὅμοιον, an amplification or correction of τοῖς σωματικοῖς στοιχείοις = "with reference to its like," "by the standard of likeness." Torstrik (p. 128) thinks the words corrupt. Non advocanda sunt quae 416 b 10 leguntur ὥστε καὶ ἡ τροφή πρὸς ἑμψυχόν ἐστιν: alia enim eius loci ratio. Revocavi igitur in quo universus locus versatur καὶ τῷ ὁμοίῳ τὸ ὅμοιον: (cf. etiam b 1 ὥστε οὐδὲ

τῶν ὁμοίων). He cites Philop. 180, 20, 26, Sophonias 34, 5 as favouring his view. This conjecture gives a satisfactory sense. Attempts have been made to connect the words with μαρτυρεῖ. Some consider πρὸς adverbial, but this is not probable, as in such cases ἔτι is joined with πρὸς: cf. 407 b 3, *Tor.* IX. 4, 166 a 35. Even then καὶ after the genitive absolute presents an insuperable difficulty. If we shrink from adopting Torstrik's restoration (for Philoponus and Sophonias may after all be paraphrasing our present text when they write ἕκαστα γνωρίζεται καὶ τῷ ὁμοίῳ [Philop. ὑπὸ τοῦ ὁμοίου] τὸ ὅμοιον), then it seems worth considering whether πρὸς τὸ ὅμοιον cannot be taken adverbially like e.g. πρὸς τὸ βέλτιστον.

a 29. μαρτυρεῖ τὸ νῦν λεχθέν. Haec esse corrupta facile apparet. Lacuna infuit, quam male suppleverunt additis μαρτυρεῖ τὸ νῦν λεχθέν, quasi praecederet πολλὰς δ' ἀπορίας ἔχειν τὸ λέγειν, non ἔχοντας τοῦ λέγειν (Torstrik). It is at least questionable whether the genitive absolute might not serve as well as the infinitive on the analogy of ὡς ὃδ' ἐχόντων τῶνδ' ἐπίστασθαί σε χρή. Torstrik continues: Accedit quod nova prorsus ratio additur 30. ὅσα γὰρ ἔστιν κτέ., de qua nondum dictum est. Τὸ λεχθέν vero non significare τὸ λεχθισόμενον, quamvis id velint interpretes graeci, nec licere τὸ λεχθισόμενον corrigere, id quod quidam faciunt libri scripti [T et corr. Uy], non est quod dicam. Probably, when he began the sentence, a 27, A. intended to contrast the many difficulties already mentioned with some still greater one to come, but the sentence was left unfinished, because before he had reached this difficulty another minor difficulty occurred to him and he plunged a 30 sqq. into a digression from which he never emerged. As to νῦν, a modern reader cannot pretend to the same linguistic appreciation as the ancients. We find, *De Part. An.* I. 1, 639 b 6, τὸ νῦν ῥηθισόμενον, but with the aorist it would seem at least as obvious to explain νῦν = νῦν δὴ, "what was just said" (cf. 432 a 28), as to resort to the explanation of Philoponus 180, 23 τὸ γὰρ νῦν λεχθέν φησιν ἀντὶ τοῦ τὸ λεχθισόμενον, and Simplicius 70, 8 ἐν δὲ τῇ λέξει τὸ μαρτυρεῖ δὲ τὸ νῦν λεχθέν ἀντὶ τοῦ λεχθισομένου ἀποδεκτέον, ὡς δηλοῖ ἐπιφερόμενος ὁ γὰρ σύνδεσμος αἰτιολογικὸς ὢν. Belger's idea that what follows is μαρτυρία and not argument is wholly unfounded.

a 30. ἔστιν...γῆς, "consist of earth": genitive of material. Cf. 405 a 10, 435 a 25, b 1, 3. ἀπλῶς, i.e. "without admixture of other elements."

410 b 1. ὥστ' οὐδὲ τῶν ὁμοίων, int. αἰσθάνεσθαι δοκεῖ.

b 2. προσῆκεν, i.e. if Empedocles' theory were true. Them. (34, 10 H., 62, 1 sq. Sp.) paraphrases καίτοι προσῆκε τῶν γούν ὁμοίων ταῦτα αἰσθάνεσθαι.

b 4. πάντα γὰρ τᾶλλα, int. ἀγνοήσει. συμβαίνει δ' Ἐμπεδοκλεῖ. See *note* on 409 b 12. Cf. *Metaph.* 1000 b 3 sqq., where the same objection is raised to the theory of Empedocles.

b 5. τὸν θεόν, i.e. τὸν σφαῖρον, Emp. *frag.* 17, 7 D [94 K], 27, 4 D [60 K]. When the work of the attractive force, φιλία, is completed, all things are united except Strife, the force of repulsion, which has been completely banished. Cf. Emp. *frag.* 35, 3 D [167 K].

b 6. ἐν goes closely with τῶν στοιχείων. τὰ δὲ θνητὰ πάντα, int. γνωρίζει. τὰ θνητὰ is the subject and πάντα, if I mistake not, is accusative, int. τὰ στοιχεῖα. ἐκ πάντων γὰρ ἕκαστον. Both the moving forces, Love and Strife, as well as the four elements, are thus represented as στοιχεῖα of every living being. Cf. *supra* 404 b 13—15. With ἕκαστον supply τῶν θνητῶν. It should be noted that inanimate objects are not included: things which have life are also subject to death (θνητὰ). Them. 34, 15 H., 62, 9 Sp. τὰ δὲ ζῶα καὶ θνητὰ πάντα τῷ πάντων μετέχειν ἅπαντα γνωρίζει. We have no means of testing this statement. It may be A.'s own inference from the fact that, unless all the elements were present in animate beings, they would be deprived in part of cognition. As Torstrik remarked, all

that the argument requires is such a clause as this: τὰ δὲ θνητὰ πάντα καὶ τοῦ νείκους μετέχει. Cf. *Metaph.* 1000 a 28 ἅπαντα γὰρ ἐκ τούτου [int. τοῦ νείκους] τὰλλὰ ἐστὶ πλὴν ὁ θεός.

b 9. ἀναγκαῖον γὰρ ἐστὶν ἐν τι γινώσκειν. The subject is πᾶν in the sense of every single thing, ἕκαστον τῶν ὄντων.

b 11. αὐτά, int. τὰ ὄντα. With this argument compare *infra* 411 b 5 sqq.

b 11. ὕλη. This term is here used in A.'s own peculiar sense of "material cause" which, since matter with him always implies its correlative, form, at once suggests another and higher cause (κυριώτατον...κρείττον).

b 12. ἐκείνο τὸ συνέχον, i.e. that other unifying cause, τὸ ἐνοποιούν, just mentioned as needing to be determined. Cf. 416 a 6, where it is objected to Empedocles that, in his mechanical explanation of the growth of plants, he has neglected to provide any unifying principle, τὸ συνέχον.

b 13. ἄρχον. This reflects κυριώτατον. The principle of which we are in search may be said to control or govern the material elements. Cf. *Pol.* 1254 a 34 τὸ δὲ ζῶον πρῶτον συνέστηκεν ἐκ ψυχῆς καὶ σώματος, ὃν τὸ μὲν ἄρχον ἐστὶ φύσει τὸ δ' ἀρχόμενον.

b 14. τοῦ νοῦ, int. εἶναι τι κρείττον καὶ ἄρχον. This is said from the standpoint of A., who distinguishes between ψυχὴ and νοῦς, unlike some of his predecessors. Cf. 404 a 27 sq.

b 15. τὰ δὲ στοιχεῖα φασὶ πρῶτα τῶν ὄντων εἶναι, whereas they, i.e. Empedocles and philosophers like him, ignore the superior claims of mind and give the priority to their elements. For Empedocles these στοιχεῖα are the four material elements and the two moving causes, Love and Strife. As elements of all that exists, they are elements of νοῦς. Them. 34, 23 H., 62, 19 Sp. οἱ δὲ οὐκ αἰσχύνονται καὶ τοῦ νοῦ τὰ στοιχεῖα ποιοῦντες στοιχεῖα.

b 16 πάντες δὲ...411 a 2 ὑπεληφότες. A. now objects that not only Empedocles and philosophers like him, but also those who like Democritus explain soul as the moving principle, and even the authors of the Orphic cosmogony, have had a wholly inadequate and imperfect conception of soul through confining their attention to animals, indeed to certain species of animals, while ignoring other animals and plants altogether. From his own more advanced position as a naturalist, who has completed a survey of the animal and vegetable kingdoms, he is dissatisfied with the hasty generalisations of his predecessors on the vital principle. The objection was foreshadowed 402 b 3 sqq. Here, however, A. points to particular species of soul, the soul of the plant and of the stationary animal, which the definitions of the soul as cognitive or as a motive principle do not satisfy.

b 17. ἐκ τῶν στοιχείων, int. εἶναι. οἱ τὸ κινητικώτατον, int. τὴν ψυχὴν λέγοντες εἶναι.

b 19. φαίνεται γὰρ εἶναι. *Ind. Ar.* 808 b 46 haud raro φαίνεσθαι c inf perinde ac cum part significat 'apparere, apertum esse.' Cf. 410 b 22 sq., 411 b 19. Bonitz cites 414 a 24 (which is not so clear a case), *Eth. Nic.* 1165 a 18, 1123 b 22.

b 19 μόνιμα...20 κατὰ τόπον. These stationary animals recur 413 b 2 sq., 415 a 6 sq., 432 b 19 sqq., 434 b 2, 4. Those with which A. was acquainted lived in the water, e.g. ὄστρακόδερμα and the ἀκαλήφῃ or sea-nettle: *Hist. An.* I. 1, 487 b 6—8, VIII. 1, 588 b 7—17, IX. 37, 621 b 2—5, *De Part. An.* IV. 5, 681 b 34 sq., IV. 7, 683 b 4—11.

b 20. ταύτην μόνην τῶν κινήσεων κινεῖν ἢ ψυχὴ τὸ ζῶον. Ταύτην = τὴν κατὰ τόπον, πορευτικὴν (432 b 13, 14). The verb here takes a cognate accusative of the motion imparted as well as an accusative of the thing moved. Cf.

406 a 31, *note*, 432 a 17. The argument is well put by Them. 34, 29—35, 2 H., 62, 29—63, 12 Sp. If, he says, the soul is τὸ κινητικόν, and yet some animals are devoid of locomotion, either they must be pronounced ἄψυχα or we must enquire why they cannot change their place, though they grow, are nourished, and have sensation. Them. continues 34, 34 H., 63, 6 Sp. καίτοι ταύτας μὲν τὰς κινήσεις, λέγω δὲ τὴν αὔξησιν καὶ τὴν αἰσθησιν, εἰ καὶ κινεῖται ὡς ἔμψυχα, ἀλλ' οὐχ ὑπὸ μόνῃς τῆς ψυχῆς, ἀλλὰ συναίτια γίνεται αὐτοῖς καὶ τὰ ἔξωθεν, τοῦ μὲν τρέφεσθαι τὰ τρέφοντα, τοῦ δὲ αἰσθάνεσθαι τὰ αἰσθητά· τῆς δὲ κατὰ τόπον κινήσεως ἡ ψυχὴ μάλιστα κυρία εἶναι δοκεῖ. Trend. (p. 236) thought that Them. read μόνῃ, arguing no doubt from ὑπὸ μόνῃς τῆς ψυχῆς, but Them.'s antithesis between ταύτας μὲν τὰς κινήσεις and τῆς δὲ κατὰ τόπον is really quite as strong evidence for his having read μόνῃν. Nor can it be conceded to Trend. that μόνῃ suits the context any better than μόνῃν: cf. *Phys.* VIII. 9, 265 b 34—266 a 5, cited above, p. 211.

b 21 ὁμοίως δὲ...22 ποιοῦσιν, int. οὐ περὶ πάσης λέγουσι ψυχῆς: in other words, as Them. (35, 4 H., 63, 15 Sp.) puts it, ἀμελοῦσι τῆς φυτικῆς, they overlook the vegetative soul which is the only principle of life in plants. Having illustrated his point as regards those who define soul as "the moving principle," A. now returns to prove it of those who define soul as "the cognitive principle," and therefore derive it from the elements of things.

b 23. τὰ τε φυτὰ ζῆν. On the soul of plants v. *infra* 411 b 27 sqq., 413 a 25—31, b 7 sq., 16, 414 a 32 sq., 424 a 32 sqq., 434 a 25—30.

b 24. δianoian οὐκ ἔχεν. Cf. 415 a 7—11, 427 b 13 sq. In 404 b 5 sq. it is ὁ κατὰ φρόνησιν λεγόμενος νοῦς which is said to be frequently absent.

b 24. εἰ δέ τις καὶ ταῦτα παραχωρήσειε. The verb is rare. Them. and Simpl. explain it by συγχωρεῖν. Ταῦτα may refer to what precedes or to what follows; in either case the effect of the concession must be expressed in b 25 καὶ θεῖη... 26 αἰσθητικόν, i.e. if we make intellect one part of the soul and sensation another. What exactly is the view thus obtained? Trend.: Quis sit, qui omni animae mentem tanquam partem tribuit, non facile est definire. Them., after supplying Ἀναξαγόρα with συγχωρήσειεν, decides for Empedocles (35, 11 H., 63, 25 Sp.): οὕτω γὰρ ἂν δόξειεν ὑπολαμβάνειν καὶ ὁ οὕτω λέγων 'ἦδη γάρ ποτ' ἐγὼ γενόμενν κούρη τε κόρος τε | θάμνος τ' οἰωνός τε,' Emp. *fr.* 117 sq. D [380 sq. K]. Simpl. (72, 2 sq.) also alludes to Empedocles and the Pythagoreans as investing irrational things with rational souls. It is just conceivable that παραχωρεῖν = "not insist upon," i.e. cease to press these cases, and ταῦτα would then be the cases of plants which live and of those animals which have not δianoia.

b 25 τὸν νοῦν...26 τὸ αἰσθητικόν: Them. 35, 10 H., 63, 22 Sp. τὸν νοῦν ἐνυπάρχειν ἀπάσῃ ψυχῇ...καὶ πᾶσαν εἶναι ψυχὴν ἐκ πασῶν τῶν δυνάμεων, Simpl. 72, 4—6. This kind of soul with (1) a rational, (2) a sensitive (acc. to Simpl. also a locomotive) faculty would be found, on this view, in every living thing.

b 26. καθόλου περὶ πάσης. Pleonasm: cf. 424 a 17, *Metaφh.* 1037 a 22 καθόλου περὶ παντός [τοῦ τί ἦν εἶναι] εἴρηται, *Phys.* VIII. 8, 264 a 21 καθόλου μᾶλλον περὶ πάσης κινήσεως, 265 a 8 καθόλου περὶ πάσης κινήσεως.

b 27. οὐδὲ περὶ ὅλης οὐδεμιᾶς. Because, as will be shown in II., c. 3, the various faculties or forms of soul are not independent, the higher always presupposing the lower. If the view impugned be that described in *note* on b 25, it obviously omits A.'s θρεπτικόν, and consequently, in his view, fails properly to explain αἰσθητικόν and νοῦς.

b 28. ἐν τοῖς Ὀρφικοῖς ἔπαισι καλουμένοις. This expression conveys a doubt as to the authenticity of the poem. Cf. *De Gen. An.* II. 1, 734 a 19, Cic. *de Nat.*

*Deor.* I. § 107 Orpheum poetam docet Aristoteles nunquam fuisse, Bernays, *Die Dial. d. Arist.* p. 96. So Iamblichus, following A., ap. Stob. *Ecl. Phys.* I. 366, 17 sqq. W., 868 H. Cf. Lobeck, *Aglaoph.* p. 348 sq., and on the Orphic literature generally see O. Kern, *De Orphei Epimenidis Pherecydis Theogonis quaest. critt.*, Gomperz, *Greek Thinkers*, E.T., Book I., cc. II., p. 80 sqq., v., p. 123 sqq., p. 537 sqq., 545 sqq.

b 29. ἐκ τοῦ ὅλου, i.e. the universe. Cf. *infra* 411 a 7. εἰσεῖναι ἀναπνεόντων. Them. (35, 18 H., 64, 5 Sp.) takes this to mean "at birth": φησὶ γὰρ τῆς ψυχῆς μεταλαμβάνειν τὰ ζῶα παρὰ τὴν πρώτην ἀναπνοήν. But the more natural meaning would seem to be "every time they breathe."

411 a 1. εἴπερ μὴ πάντα ἀναπνεύουσιν. A. believed that fishes do not breathe. He was not aware of the true function of their gills. Cf. 420 b 9—13.

a 2 εἰ τε δέ...3 ἀπάντων: a fresh argument directed solely against those who derived the soul from the elements.

a 3. θάτερον μέρος τῆς ἐναντιώσεως. Here ἐναντιώσεως signifies "a contrariety," i.e. a pair of contraries. Cf. 405 b 23, *note*. Also *Metaph.* 1004 b 26—1005 a 8. Most of A.'s predecessors assumed contraries as their principles. See *Metaph.* 1004 b 29 cited ad 405 b 23: also 1075 a 27—30.

a 4. ἐαυτὸ τε κρίνειν καὶ τὸ ἀντικείμενον. This follows from A.'s well-known principle, which is also Platonic, that the knowledge of contraries is one and the same. Cf. 427 b 5, *note*. He who knows hot (sometimes assumed as an element) will know the negation of hot, i.e., A. would argue, its contrary, cold: but, unless the two contraries are related as ἕξις and στέρησις (*Metaph.* 1004 b 26 εἰ τῶν ἐναντίων ἡ ἑτέρα συστοιχία στέρησις), which is not always the case, this argument is fallacious, as Simpl. points out (72, 24—73, 1). See *Metaph.* 1055 b 14 sqq. By the carpenter's rule we shall only know what is circular as not straight, exactly as we should know what is straight to be non-circular if we applied to it a circular rule. A. uses κρίνειν for the strictly cognitive function both of perception and thought. See 424 a 5, 426 b 10, 428 a 3. This function is the link which connects sense with thought: 427 a 18 νοεῖν καὶ κρίνειν καὶ αἰσθάνεσθαι. The result in either case is a judgment or proposition which may be true or false, 428 a 3 sq., 430 a 27 sqq., 432 a 11 sq.

a 6. ὁ κανὼν. Cf. *Rhet.* I. 1, 1354 a 26, *Metaph.* 998 a 3, *Eth. Nic.* II 113 a 33, II 137 b 30 sq.

411 a 7—26. To the kindred theory that soul is intermingled with the whole universe it may be objected (1) that the elements themselves (no less than their compounds) will then become living beings, especially as the soul in elemental air or fire is assumed to be purer than that present in animals [§§ 17—20]. Also (2) the ground for assuming that the elements at large are animated like the parts of them which go to constitute particular things is the principle that the whole is homogeneous with its parts. But from this principle it must follow that the parts of universal soul found in particular things are also homogeneous *inter se*, which is not the case. If it be admitted that air is everywhere uniform and soul is not, it will follow that, though part of the soul may be derived from the atmosphere, part of it is not, which is contrary to this theory. Either, then, soul is everywhere of the same nature, or it must be admitted that it is not uniformly present in every sort of thing [§ 21].

a 7 καὶ ἐν τῷ ὅλῳ δέ...23 τοῦ παντός. Here A. makes a transition to a somewhat different view. Empedocles had said that soul knows, because it is compounded of the same elements as the things which it knows. A. has argued above that, if this were so, all things would be animate, a *reductio ad absurdum*, as he thinks. The opinion that soul was everywhere diffused had,

however, found supporters, and accordingly he proceeds to examine it. In Prof. Bywater's view the whole passage now commencing as far as 411 a 23 (§§ 17—21) is connected with 410 b 27—411 a 2 (§ 15), the intervening section 411 a 2—7 interrupting the context. On this ground he would alter δὲ to δὴ (*Journal of Philology*, xvii. pp. 53, 54).

a 8. ὅθεν ἴσως καὶ Θαλῆς. Illud ἴσως...aliquid dubitationis relinquit. So Trend. Later writers are more explicit. Aetius *Plac.* I. 7, 11 (*Doxogr. Gr.* 301) νοῦν τοῦ κόσμου τὸν θεόν, τὸ δὲ πᾶν ἐμφυχον ἅμα καὶ δαιμόνων πλήρες· δῆκεν δὲ καὶ διὰ τοῦ στοιχειώδους ἕγρου δύναμιν θείαν κινητικὴν αὐτοῦ, Diog. Laert. I. 27 τὸν κόσμον (int. ὑπεστήσατο) ἐμφυχον καὶ δαιμόνων πλήρη. The apophthegm itself was well known: Plato, *Law* x. 899 b ἐσθ' ὅστις ταῦτα ὁμολογῶν ὑπομενεῖ μὴ θεῶν εἶναι πλήρη πάντα; Cicero, or his authority, gives it a religious turn, *De Legg.* II. 11 § 26 "Thales...homines (dicit) existimare oportere omnia, quae cerneant, deorum esse plena; fore enim omnis castiores, veluti cum in fanis essent maxime religionis."

a 9. ἐν μὲν τῷ ἀέρι. From this we learn how A. himself interprets the theory that soul is intermingled in the universe. He regards it as meaning that soul is present in all the elements, wherever found; while he would probably have agreed with Plato (*Philebus* 29 b sqq.) in thinking that these elements are found in the universe (ἐν τῷ παντί) in a purer and more potent form than in human organisms (παρ' ἡμῖν). Whether this would have been admitted by the supporters of the theory under examination we cannot tell; but from A.'s language in the next sentence (ἐπιζητήσῃε γὰρ ἂν τις) it seems highly probable that they did admit it.

a 10. ἐν δὲ τοῖς μεκτοῖς, those compounds of elements which form the bodies of animals. In 435 a 11—b 3 A. will prove on teleological grounds that no animate body can be constituted out of one or more ἀπλὰ σώματα; the constituents must be μεκτά. Such is the constitution of the ὁμοιομερῇ or tissues: *De Part. An.* II., c. 1. Cf. *De Gen. et Corr.* I. 10, 328 a 4 εἴπερ καὶ ἔστι σῶμα σῶματι μικτὸν ὁμοιομερές, *ib.* a 10, *Meteor.* IV. 8, 384 b 30, *ib.* IV. 12, 389 b 26 ἐκ μὲν γὰρ τῶν στοιχείων τὰ ὁμοιομερῇ. See *supra* p. 264 and *notes* on 408 a 11, 17.

a 13. συμβαίνει. Torstrik pointed out that 411 a 11 ἐπιζητήσῃε...13 ἀθανατώτερα is a parenthesis; (p. 131) ita enim facilius intelligitur quae sequantur non ut haec refellantur adiungi sed ut redarguatur principalis adversariorum propositio 7 ἐν τῷ ὅλῳ τὴν ψυχὴν μεμίχθαι.

a 14. ἀμφοτέρως. Whichever alternative they choose leads to an absurdity. It is equally absurd to call fire or air an animal and to deny the title animal to that which has soul in it. It should be noted that, although the presence of soul does not, according to A., necessarily imply a ζῶν (see e.g. 410 b 22 sq.), but only ζῶν τι, yet the presence of a soul that is βελτίων...καὶ ἀθανατώτερα would imply this.

a 15. παραλογωτέρων. Philop., like Them., in place of this word reads παραβολωτέρων, which he explains thus: 189, 11 παραβολώτερος ὁ λόγος, τουτέστι τολμηρὸς καὶ ἐπικίνδυνος.

a 16. ὑπολαβεῖν δ' ἐόικασιν. They seem to have arrived at the opinion that the elemental bodies (411 a 11 ἐν τοῖς=ἐν ὅλοις τοῖς ἀπλοῖς σώμασιν, Them. 36, 4 H., 65, 12 Sp. fire and air being examples) contained soul, from observing that each of them is homogeneous, the fraction of each element found in our bodies not being different in kind or quality from the same element outside of us. Compare again Plato *Phil.* 29 a—30 b.

a 18. ὥστ' ἀναγκαῖον αὐτοῖς. They are bound in consistency to extend this principle, that the whole is homogeneous with its parts, to the case of soul.

a 18. ὁμοειδῇ τοῖς μορίοις. Cf. *infra* a 23 ὁμοιομερῇ.

a 19 εἰ τῷ ἀπολαμβάνεσθαι τι...20 γίνεται. ἀπολ. is passive. Some portion of a given element is detached from the surrounding universe (cf. *supra* 404 a 10) and enclosed in the organism, e.g. air during respiration: Them. 36, 7 H., 65, 15 Sp. ὥσπερ γὰρ τὰ μόρια τῶν ἀπλῶν σωμάτων ἐναπολαμβανόμενα τοῖς ζώοις σύνθετα αὐτὰ ἐκ πάντων ποιεῖ, οὕτω καὶ τὰ μόρια τῆς ἐκάστου τῶν στοιχείων ψυχῆς ἐμψυχα αὐτὰ ἀπεργάζεται.

a 20 εἰ δ' ὁ μὲν ἀήρ...21 ἀνομοιομερής. This does not mean, as Them. (36, 9—12 H., 65, 19—23 Sp.) supposes, that while there is no difference of kind between elemental air as a whole and that part of it which goes to constitute the body of an animal, there is a difference of kind between the soul which animates the whole element and the soul of the animal, viz. that the former is superior to the latter. The use of a different word ἀνομοιομερής suggests another meaning. Soul is made up of unlike parts or faculties (nutritive, sensitive, etc.) not always found in combination. Propositionem quae in refutatione efficiendā minor est tanquam ab omnibus concessam ne ponit quidem, animam nimirum humanam differre ab animā ceterorum animalium, a plantae animā utramque.... Anima, ait, quae inest corporibus viventibus non est ὁμοιομερής: at debebat esse ut aliquam vim haberet adversariorum argumentum quod legimus 16—17 (Torstrick, p. 132).

a 21 τὸ μὲν τι αὐτῆς...22 τὸ δ' οὐχ ὑπάρξει, int. τῷ ἀέρι. Αὐτῆς=τῆς ψυχῆς. Whether we do or do not follow Torstrick in considering ὑπάρξει ὄντων ὅτι an intrusion from the margin, in any case the main stress rests on the second of the coordinated and contrasted clauses. The argument seems to be as follows. If the air is ὁμοειδής, homogeneous, uniform, then whatever form of soul is contained in one part of the air must be contained in all parts of the air. Again, since it is by a part of the surrounding air being separated from the rest and enclosed in animals that they become endowed with soul, the soul in animals should be uniform also, in which case it could be only the lowest type found in animals. But, as a matter of fact, higher animals possess in addition to the lowest form higher forms, e.g. man has the rational soul (410 b 16—24). These higher types of soul cannot, as above shown, be present in the air. Therefore, if the soul is to be present uniformly in the air, it must itself be homogeneous: and, if it is not homogeneous, it cannot be present uniformly in the air.

a 23. τοῦ παντός. Cf. 411 a 7 ἐν τῷ ὅλῳ. Them. (36, 20 H., 66, 4 Sp.) and Simpl. (76, 6 sq.) understood τοῦ παντός, like ἐν τῷ ὅλῳ, of the universe. Philop. (192, 10—12) mentions this interpretation, as well as that which understands ἀέρος with τοῦ παντός, without deciding between them. Trend., however, favours the latter: de singulis elementis et de aëre maxime dictum est. As in this particular point, so generally in discussing 411 a 7—23, the Greek commentators are influenced by their personal philosophical predilections. Thus Simpl. (74, 27 sqq.) ascribes to the elements a diviner life and a higher degree of immortality than to men, and repudiates altogether the notion that they are without soul. On the other side cf. Philop. 192, 2—9. Them. again (e.g. 36, 12 H., 65, 22 Sp.) regards the assumption that soul is ἀνομοιομερής (or at least οὐχ ὁμοειδής) as based upon the belief that there is a better and more immortal soul in the elements than that which animates τὰ ζῶα (cf. 411 a 11, 13). He declines to credit A. with this belief, which he does not hold himself.

a 24 φανερόν οὖν...26 λέγεται. This sentence dismisses the two main views of soul previously maintained; cf. 403 b 27 sqq. The view that it is composed of the elements has occupied us in this chapter, 409 b 23—411 a 23; the view



that it is moved was examined 405 b 31—407 b 11 and 408 b 30—409 b 18. The remainder of this chapter discusses questions relating to the unity or divisibility of the soul, cf. 402 b 1, 9 sqq.

**411 a 26—b 30.** The dismissal of these theories suggests the further enquiry whether the various functions of soul, perception, opinion, desire, etc. belong to the whole soul or are to be severally assigned to parts of the soul. The question may even be raised of life itself. Does it reside in one or more or all parts of the soul, or is it due to some other cause? [§ 23]. Of those who make the soul divisible we enquire "On what does the unity of the soul depend?" If there is a principle of unity, a soul of the soul, we go on to enquire whether it also has parts? Then what holds *them* together? and so on *ad infinitum* [§ 24]. Again, if soul as a whole keeps the body together, what share in this process must be assigned to the several parts of the soul, e.g. to the intellect [§ 25]? Experiment shows that plants and the lower orders of animals continue to live for some time after they have been divided; hence we may infer that the vital principle in the two segments is of the same nature; there is no reason to assume division into parts [§ 26]. This vital principle will be the vegetative soul of plants, and the sentient and locomotive faculty of worms [§ 27].

**a 26.** ἐπεὶ δὲ τὸ γινώσκειν τῆς ψυχῆς ἐστὶ. The question which in 411 a 30 follows this long enumeration of functions of the soul is perhaps due to the suggestion 408 b 11 sqq. that not the soul itself but the man with his soul is the true subject of these functions, the ὑποκείμενον to which as ἔργα καὶ πάθη they belong. The man is a σύνολον, a compound of body and soul; so that the problem of the latter part of c. 1, 403 a 3—b 19, is closely akin to that which is about to be discussed.

**a 28.** καὶ ὅλως αἱ ὀρέξεις. Cf. 403 a 7, *note*. From 433 a 22 sqq. it appears that βούλησις is a species of ὄρεξις and is opposed to ἐπιθυμία as rational to irrational desire. Cf. 432 b 6 εἰ δὲ τρία ἡ ψυχὴ, ἐν ἐκάστῳ ἔσται ὄρεξις. 414 b 2 ὄρεξις μὲν γὰρ ἐπιθυμία καὶ θυμὸς καὶ βούλησις. Desire, which was to Butler a generic term, is nowadays ambiguous, sometimes used for the genus, ὄρεξις, sometimes for the species, ἐπιθυμία, which has pleasure or pleasurable sensation for its object (Butler's "appetite").

**a 29.** γίνεταί δὲ. This is still part of the protasis, which extends to a 30 φθίσις. It is permissible, in translating such a long preamble, to drop the causal conjunction, which is replaced by "hence" or "therefore" where the apodosis begins. Cf. *Rhet.* II. 18, 1391 b 8 sqq. with Cope's note; Bonitz, *Aristot. Studien*, II., III. p. 3 sqq. ὑπὸ τῆς ψυχῆς γίνεσθαι="to come about" and ὑπάρχειν="to be attributed to" often serve as passives of verbs of causation with ὑπὸ and διὰ. Cf. 408 b 7, *note*, 417 b 17. Cf. Eucken, *Ueber die Praepositionen*, p. 73, *Metaph.* 1033 b 8, *Phys.* II. 8, 199 a 13.

**a 30** πότερον ὅλη τῇ ψυχῇ...411 b 3 ἢ μορίοις. This is the apodosis to ἐπεὶ (411 a 26). From the theory sketched in Bk II., c. 3 onwards we might too hastily infer that A. decides in favour of the second alternative, merely modifying the scheme of parts or faculties previously recognised (cf. 432 a 22—b 7, 433 b 1—4). But the hypothesis of unity is evidently favoured by the present passage and is supported by still more weighty considerations in 425 a 31, 426 b 14—427 a 16, 429 b 13—21, 430 b 5, 431 a 20 sq.

**411 b 1.** καὶ πάσῃ, "that is, it is with the whole soul that we think?" Καὶ is explicative,="that is to say."

**b 3.** καὶ τὸ ζῆν δὴ. And, further, as regards life itself, which is implied in all these functions, where, we ask, does it reside? Cf. φῶμεν, 414 a 4 (with which again cf. 413 b 1, 415 a 23—25). Philop. 195, 34—196, 4 rightly interprets ζῆν

of the barest minimum, the life of the plant, and accordingly refers it to the *φυτική δύναμις* or vegetative faculty.

b4. ἡ καὶ ἄλλο τι αἰτιον, i.e. is there some cause independent of soul, its parts or faculties, to which this lowest grade or minimum of life should be assigned? From A.'s own point of view, as set forth in the definition, II. cc. 1—3, it is a defect to overlook mere vitality in its lowest grade as belonging to soul, just as it is equally a defect in Democritus to equate *ψυχή*, wherever found, with *νοῦς*, life with mind, and recognise no distinction of kind between this lowest grade of vitality and the highest intelligence.

b5. λέγουσι δὲ τινες, Plato in the *Republic* and the *Timaeus*. Cf. *Republic* 434—441 (especially 435 C, 439 B), 442 C, 444 B, *Timaeus* 69 c sqq. (cf. *Phaedr.* 246 A). On the other hand the *Phaedo* ignores this tripartition, and treats soul as a unity in contradistinction to body: *Phaedo* 78 B—80 B (cf. 66 A—E, 81 D—84 B). A. recurs to the Platonic division 413 b 27, the whole passage 413 b 13—32 being concerned with the same problem; and again 432 a 22 sqq., where he has his last word on the subject. ἄλλο μὲν νοεῖν ἄλλο δὲ ἐπιθυμεῖν. Probably these are simply illustrations of alleged "parts," not intended to be exhaustive; cf. 432 a 25 sq. The division of soul into *λογιστικὸν* and *ἄλογον* was current in popular opinion before Plato, and is adopted by A. himself as the basis of the popular exposition of psychology given in *Eth. Nic.* 1102 a 26 sqq.

b6 τί οὖν δὴ ποτε...7 πέφυκεν. Cf. *infra* b 9 μίαν αὐτὴν ποιεῖ. In his analysis of the notion of unity A. begins by classifying the things of which the term "one" is predicated. He makes a twofold division into (a) ὧν ἡ κίνησις μία, (b) ὧν ἡ νόησις μία. Under (a) he brings τὰ φύσει συνεχῆ, things which possess natural continuity (*Metaph.* 1016 a 4, 1052 a 35), and wholes, ὅλον, τὸ ἔχον εἶδος (1052 a 22), and even admits ὧν τὸ ὑποκείμενον τῷ εἶδει ἀδιάφορον (1016 a 18). Under (b) he places τὸ καθόλου, ὧν τὸ γένος ἓν (1016 a 24) and τὸ καθ' ἑκάστον, ὧν ἡ νόησις ἀδιαίρετος ἢ νοοῦσα τὸ τί ἦν εἶναι (1016 b 1). Cf. 1016 a 4 sqq., 1052 a 20, 30, 34 sqq. Coherence or continuity on the one side, indivisibility on the other, are thus the marks of unity. Cf. 420 a 3, *note*.

A. defines his own position 1045 a 8—12. In all things which consist of several parts, where the entire thing is not a mere heap or aggregate, but a whole distinct from its parts, there is some cause of unity: in corporeal things contact, cohesion or some similar property. See also *note* on 402 b 5. Hence, when examining a divergent theory, he can enquire if it explains why things, especially incorporeal things, are one: e.g. what makes the unity of mathematical magnitudes, *Metaph.* 1077 a 20—24, or of the number, *ib.* 1044 a 3 καὶ τῷ ἀριθμῷ δεῖ εἶναι τι ᾧ εἷς, ὃ νῦν οὐκ ἔχουσι λέγειν τίνι εἷς, εἴπερ ἐστὶν εἷς. ἡ γὰρ οὐκ ἐστὶν ἀλλ' οἷον σωρός, ἡ εἴπερ ἐστὶ, λεκτέον τί τὸ ποιοῦν ἐν ἐκ πολλῶν. Cf. *Metaph.* H., c. 6 generally, especially 1045 a 22—b 17, which gives his own solution of the problem. Cf. also 410 b 10 sqq.

b7. οὐ γὰρ δὴ τό γε σῶμα, though Democritus amongst A.'s predecessors (cf. 404 a 9—16) and after him Epicurus held this opinion, while on the other hand the Stoics regarded the material body as held together by the equally material soul. δοκεῖ γὰρ. A widespread popular view. See Plato *Phaedo* 80 c ᾧ προσήκει διαλύεσθαι καὶ διαπίπτειν καὶ διαπνεῖσθαι (the last two words, not found in the best MSS., were omitted by C. F. Hermann. Considering that *σῆμα* recalls ἂν σαπῇ of *Phaedo* 80 d it seems safe to assume that A. read them). τοῦναντιον. Cf. 416 a 6—9, where A. insists, against Empedocles, on the necessity of a unifying principle, i.e. a soul, to keep together the plant. Cf. *Metaph.* 1077 a 21 τὰ μὲν γὰρ ἐνταῦθα ψυχήν ἢ μέρει ψυχῆς ἢ ἄλλῳ τινὶ εὐλόγῳ

[some rational cause]· εἰ δὲ μή, πολλά, καὶ διαλύεται [they become a plurality and fall to pieces].

b 10. *ἐκείνο*, i.e. that other something, *ἕτερόν τι*, which holds the soul together, and is the cause of its unity. The difficulty is then shifted to this "soul of the soul."

b 13. καὶ οὕτω δὴ πρόεισιν ἐπὶ τὸ ἄπειρον. Impersonal, as in other cases where this formula is used; *Ind. Ar.* s.v. 638 b 22 sqq. Cf. 425 b 16, *Eth. Nic.* 1094 a 20, *Metaph.* 1000 b 28, 1006 a 8 sq. It seems improbable that *ὁ λόγος* is the subject. An infinite regress of this sort A. declares to be in actuality impossible. *Anal. Post.* I. 22, 83 b 6 sq. *Phys.* VIII. 8, 263 b 3 ὥστε λεκτέον πρὸς τὸν ἐρωτῶντα εἰ ἐνδέχεται ἄπειρα διεξελεθῆναι ἢ ἐν χρόνῳ ἢ ἐν μήκει, ὅτι ἔστιν ὥς, ἔστι δ' ὡς οὐ. ἐντελεχεία μὲν γὰρ ὄντα οὐκ ἐνδέχεται, δυνάμει δ' ἐνδέχεται. When an opinion under criticism has been shown to involve an infinite regress in actuality, A. regards it as disproved by *reductio ad impossibile*.

b 14. ἀπορήσειε δ' ἂν τις. A corollary to the question b 6 τί οὖν συνέχει τὴν ψυχὴν, εἰ μεριστὴ πέφυκεν; Various difficulties attend the working out of any theory assigning different functions to different parts of the soul.

b 15 εἰ γὰρ ἡ ὅλη...16 συνέχει. Supply as a second premiss "and if the soul is divisible" (b 7). Note also that A. is employing the same mode of argument from whole to part as in 408 a 10—13 and 412 b 23—25. See *notes*.

b 18. χαλεπὸν καὶ πλάσαι. Cf. 406 a 27, *note*. The statement is important from its bearing on *νοῦς* (*Philop.* 199, 26, 28 μύριον γὰρ τῆς ψυχῆς καὶ ὁ νοῦς), which, as we shall see, 429 a 24—27, is independent of the body and employs no bodily instrument. *Philoponus* continues, 200, 2 ἐν τούτῳ δὲ τῷ χωρίῳ ὁ Ἀλέξανδρος ἀπορήσας παντελῶς εἰπεῖν τι τοῦ ἰδίου σκοποῦ ἐχόμενον, σιωπῇ παρήκε τὸ χωρίον. καὶ ἐξ αὐτῶν ἄρα τῶν ἐνταῦθα λεγομένων δηλὸς ἐστὶν ὁ Ἀριστοτέλης ἐτέρας οὐσίας εἶναι λέγων τὸν νοῦν καὶ χωριστόν. Perhaps *Alex. Aphr.* supposed that A. is here accommodating himself to the views of his opponents. The inference of *Philop.* is borne out by 413 b 24 sq.

b 19 φαίνεται δὲ καλ...27 οὕσης. These facts, to which A. again appeals, 413 b 16—24, are introduced here to suggest that the soul in each separate segment resembles the soul of the undivided plant or animal, as in 409 a 9 sq.: the soul of each segment is not indeed numerically identical with, but is specifically the same as, the soul of the entire organism. The view that the soul has parts would lead us to expect a fragment of soul, the imperfect or mutilated soul, in each of the segments. As *Themistius* says (37, 36—38, I H., 68, 23—25 Sp.), in the case of plants we do not find one sort of vegetative soul in the root, another in the stem and another in the branches.

b 20. *ἔνια τῶν ἐντόμων*. A. gives a definition of "insects," *Hist. An.* I. 1, 487 a 32 καλῶ δ' ἐντομα ὅσα ἔχει κατὰ τὸ σῶμα ἐντομάς, ἢ ἐν τοῖς ὑπτίοις ἢ ἐν τούτοις τε καὶ τοῖς πρᾶνέσιν: and again IV. 1, 523 b 12 sqq., where he remarks that many species are included under the term. A.'s "insects" include not only *insecta* proper (A.'s *Hexapodous* insects), *Myriapoda* and *Arachnida*, but also intestinal parasites, but they do not include *Crustacea*. "Segmentation was the main character of the group in A.'s estimation. Probably therefore he included *Annelida* in the group, led to this not only by their manifest segmentation, but by their retention of life when cut into pieces, a character often mentioned by him as specially belonging to insects" (*Dr Ogle, Parts of Animals*, p. 229). It is mainly of earthworms that A. is thinking here and in the parallel passages. I am informed that in recent years the groups formerly included under *Annelida* have been redistributed, and that a new class, *Chaetopoda*, has been formed under which earth-worms are now included as belonging to *Oligochaeta*.

b 20. ὡς τὴν αὐτὴν ἔχοντα ψυχὴν τῷ εἶδει, εἰ καὶ μὴ ἀριθμῷ. To numerical identity is opposed specific identity. All the members of a class or kind share in the characteristic properties which belong to the kind, its specific differences: *Ind. Ar.* 94 a 35 ἔν, τὸ αὐτὸ ἀριθμῷ, dist. εἶδει (λόγῳ), γένει, κατ' ἀναλογίαν, *Top.* 1. c. 7, 103 a 6 sqq. On the four meanings of ταῦτόν, viz. ἀριθμῷ, εἶδει, γένει, κατ' ἀναλογίαν, see *Metaph.* esp. 1016 b 31—5 with Bonitz' commentary. Cf. 415 b 7 ἀριθμῷ μὲν οὐχ ἔν, εἶδει δ' ἔν, *Philop.* 200, 18—20 ὥστε μία καὶ ἡ αὐτὴ ψυχὴ ἐπὶ τούτων πρότερον μὲν τῷ ἀριθμῷ, πρὶν διαιρεθῆναι, μετὰ δὲ τὸ διαιρεθῆναι τῷ εἶδει (cf. 411 b 25 ὁμοειδεῖς), οὐκέτι μέντοι καὶ τῷ ἀριθμῷ.

b 23. ὥστε σώζειν τὴν φύσιν, to maintain their nature or being, i.e. to keep themselves alive, to survive as natural objects, using their organs and faculties to escape destruction. Cf. 416 b 13 ἥ δὲ τὸδε τι καὶ οὐσία [int. τὸ ἔμψυχον], τροφή· σώζει γὰρ τὴν οὐσίαν, καὶ μέχρι τούτου ἐστὶν ἕως ἂν τρέφηται, 416 b 17 ἡ μὲν τοιαύτη τῆς ψυχῆς ἀρχὴ [i.e. τὸ θρεπτικὸν or φυτικόν] δυνάμεις ἐστὶν οἷα σώζειν τὸ ἔχον αὐτὴν ἢ τοιοῦτον.

b 24. ἀλλ' οὐδὲν ἦττον, although the segments of the worms fail to maintain a separate existence for any length of time. ἐν ἑκατέρῳ τῶν μορίων, in each of the segments, i.e. the parts of the body which has been divided.

b 25. ἅπαντ' ἐνυπάρχει τὰ μόρια τῆς ψυχῆς. This brings out the full force of b 20 ὡς τὴν αὐτὴν ἔχοντα ψυχὴν τῷ εἶδει. Here μόρια must mean the parts or faculties of the single soul, which in the illustration, b 21, are cited as αἰσθητικὸν and κατὰ τόπον κινητικόν, in addition to θρεπτικόν, which must also be present, as in the cutting of the plant. Probably from the presence of αἰσθητικὸν A. would infer ὀρεκτικόν in its lowest form. A.'s point is that all the faculties present in the soul before the division into segments are present after division in each of the segments.

b 25. ὁμοειδεῖς εἰσὶν ἀλλήλαις καὶ τῇ ὅλῃ. The text here is very uncertain. The reading ὁμοειδεῖς...ἀλλήλαις has the better authority, for though Trend.'s note (ed. 1, p. xxxiv.) is "ὁμοειδῆ nunc scriptum est in cod. E; quam Bekkerus ὁμοειδεῖς lectionem commemoravit, eam subfuisse coniectum est," there is no doubt that the scribe of E first wrote or intended to write ὁμοειδεῖς and then changed to ὁμοειδῆ. The former was read by Simpl. and Philop., who are far older witnesses. It is possible that ὁμοειδῆ is genuine and was altered to ὁμοειδεῖς to suit τῇ ὅλῃ. If ἅπαντα τὰ μόρια is the subject of ὁμοειδῆ εἰσὶν, it must be taken distributively in this sentence, so that τῇ ὅλῃ = τοῖς τῆς ὅλης μορίοις. Torstrik restored ὁμοειδεῖς and he argues in its defence that ὁμοειδῆ could not be applied to τὰ μόρια τῆς ψυχῆς understood as faculties: ipsae animae eiusdem generis sunt, non animae partes vel facultates: nam τὸ ὀρεκτικόν opinor ex alio genere est ac τὸ αἰσθητικόν, et cetera simili modo (p. 133). He has not quoted, but doubtless had in mind, 411 a 18 καὶ τὴν ψυχὴν ὁμοειδῆ τοῖς μορίοις εἶναι, where the argument requires that by τοῖς μορίοις A. should mean not the single faculties, but the entire souls of separate individuals. But, if all the parts of the soul in each of the two segments are said to be homogeneous (ὁμοειδῆ) with one another, it is possible to understand by this not, as Torst. seems to think, that the appetitive part is homogeneous with the sensitive part found in the same segment, but rather that the sensitive part in the one segment is homogeneous with the sensitive part in the other, and so on, and consequently the whole soul made up of these faculties in the one segment with the whole soul made up of these faculties in the other, and with the whole soul made up of these same faculties in the as yet undivided organism. Thus understood, the reading ὁμοειδῆ...ἀλλήλοις gives a plain sense. Cf. Them. (38, 11 H., 69, 9 Sp.) ἐξ ὧν ἀπάντων δῆλόν ἐστιν, ὅτι ὁμοειδῆ τὰ μόρια τῆς ψυχῆς καὶ ἀλλήλοις καὶ τῇ ὅλῃ, ἀλλήλοις μὲν τὰ ἐν τοῖς μέρεσι

τοῖς διηρημένοις τοῦ σώματος, ὅλη δὲ τῇ πρὸ τῆς διαιρέσεως ἐνυπαρχούσῃ τῷ ζῳῳ. Can as much be said for ὁμοειδεῖς...ἀλλήλαις? Philop., who cites the passage in full with this reading (200, 24—26), does nothing to elucidate it, for his commentary would be more appropriate to ὁμοειδῆ...ἀλλήλοις : (200, 26) τὰ γὰρ μέρια τοῦ ἐντόμου, ὁμοίως δὲ καὶ τῶν φυτῶν, ἑαυτοῖς τέ εἰσιν ὁμοειδῆ, ὅτι οὐ χωριστὰς ἔχουσι τὰς δυνάμεις τῆς ψυχῆς, ἀλλὰ πᾶσαι αἱ δυνάμεις ἐν ἐκάστῳ εἰσὶ. τοῦτο γὰρ ἐστὶ τὸ ἀλλήλων μὲν ὡς οὐ χωριστὰ ὄντα. εἰσὶ δὲ καὶ τῇ ὅλῃ ψυχῇ ὁμοειδῆ τῇ πρὸ τῆς τοῦ ζῳου διαιρέσεως. εἰσὶ δὲ αὐτῇ διὰ τοῦτο ὁμοειδῆ, ὡς διαιρετῆς οὐσης τῆς ὅλης εἰς ὁμοιομερῆ. The incongruity is noticed by Trend., p. 241 ex quibus etsi verba ὁμοειδεῖς εἰσιν ἀλλήλαις laudantur, quid Philop. ipse, cum statim τὰ μέρια subiciat, legerit, non satis patere arbitramur. Simplicius seems to have understood ἅπασαι αἱ ψυχαὶ as the subject of ὁμοειδεῖς...τῇ ὅλῃ, as he is at pains to prove that each of the faculties could be called a soul : (79, 27) εἰ δὲ αἱ ἔσχαται ζῳαὶ ἀμερίστως ἀλλήλαις συνυπάρχουσι, μειζόνως αἱ κρείττους, καὶ ὁμοειδεῖς εἰσὶν, οἷον αἱ ψυχαί, ἀλλήλαις τε καὶ τῇ ὅλῃ. ψυχὰς νῦν οὐ τὰς ἐν πλείοσι ζῳαῖς καλῶν, ἀλλὰ τὰς ἐν ἐκάστῳ ζῳῳ διαφόρους ζῳάς, οἷον τὴν φυτικὴν, τὴν αἰσθητικὴν, τὴν λογικὴν. εἶναι δὲ ταύτας καὶ ἀλλήλαις καὶ τῇ ὅλῃ ὁμοειδεῖς, οὐχ ὅτι τὸ φυτικὸν καὶ τὸ αἰσθητικὸν τῷ εἶδει ταῦτόν, ἀλλὰ διὰ τὴν ἀχώριστον πρὸς ἀλλήλας σύμφυσιν. And, commenting upon ἀλλήλων μὲν κτέ., he remarks (80, 17) ἡ δὲ λέξις ἡ ἀλλήλων μὲν...ἀκαταλήλως εἴρηται, ὅτι τε ἀπὸ τῶν ψυχῶν ἐπὶ τὰ μέρια μετενήνκεται, καὶ ὅτι ἀντὶ δοτικῆς γενικῆς πτώσει χρῆται. θεὸν γὰρ ἀλλήλαις φάσαι, ἀλλήλων εἶπεν. Here Simpl. is careful to point out that A. does not go on talking of ἅπασαι αἱ ψυχαί, but reverts once more to ἅπαντα τὰ μέρια. The changes of subject from μέρια expressed to ψυχαί understood and back again to μέρια are capricious and harsh to the last degree. But any inference from this harshness is double-edged : ὁμοειδεῖς may have been altered to get rid of it ; as I have suggested above, it may have been produced by altering ὁμοειδῆ, in order expressly to exclude that interpretation of ὁμοειδῆ which Torst. rightly rejects as intolerable and absurd. In any case it is curious to find that Simpl. and Philop. seem so little alive to the meaning of the change of expression. Can they be following an authority who explained ὁμοειδῆ, though they themselves read ὁμοειδεῖς? If we have to interpret ὁμοειδεῖς as predicate of αἱ ψυχαί, it seems strange that Simpl. should not have taken the obvious meaning of ψυχαί, viz. the complete soul or fraction of soul in each segment (cf. 411 b 20 τὴν αὐτὴν ἔχοντα ψυχὴν τῷ εἶδει), for ὁμοειδής = ἡ αὐτὴ τῷ εἶδει. The sentence then becomes parenthetical—"And each of the two souls in the two segments is homogeneous with the other and with the whole soul prior to segmentation." So Bender : "Jedenfalls hindert das nicht, dass nicht in jedem Theil sämtliche Theile der Seele enthalten seien, und diese verschiedenen Seelen sind sowohl einander gleichartig, als auch der ganzen Seele." The strong point in favour of ὁμοειδῆ...ἀλλήλοις is that the same subject ἅπαντα τὰ μέρια τῆς ψυχῆς is retained throughout and in the same sense, "all the parts or faculties of the soul." But this advantage is entirely thrown away if we take this subject to mean firstly with ἐνυπάρχει the divisions of the soul in the sense of faculties and secondly with ὁμοειδῆ as the divisions, or rather divided portions, of the whole soul retained by each segment. I cannot, therefore, accept M. Rodier's version : "Mais il n'en est pas moins vrai que, dans chacun des segments, toutes les parties de l'âme sont contenues, et que les portions de l'âme ainsi divisée sont spécifiquement identiques entre elles et à l'âme tout entière."

b 26 ἀλλήλων μὲν...27 οὐσης. Simpl. (80, 17—20) thinks, as we have seen, that A. has passed from the souls to the parts and has used the genitive (ἀλλήλων, τῆς δ' ὅλης) instead of the dative. This points to a brachylogy for

ἀλλήλοις μὲν (ὁμοειδῇ) ὥς ἀλλήλων οὐ χωριστὰ ὄντα, τῇ δὲ ὅλῃ ψυχῇ (ὁμοειδῇ ὄντα) ὥς διαιρετῆς οὕσης τῆς ὅλης ψυχῆς. I prefer a simpler explanation. The construction is obscured by the artificial order of the words. ἀλλήλων (which is genitive after χωριστά) and τῆς ὅλης ψυχῆς (in the genitive absolute with ὥς) reproduce the antithesis suggested by ἀλλήλαις καὶ τῇ ὅλῃ ψυχῇ. The first ὥς is followed by accusative absolute: the presence of ἀλλήλων requires that, if any absolute case is used, it should be the accusative. The idiomatic terseness and antithesis of the text stand out by comparison with a paraphrase such as the following: ὥς τῶν μορίων χωριστῶν ὄντων ἀλλήλων μὲν οὐ, τῆς δ' ὅλης ψυχῆς ὥς διαιρετῆς οὕσης. The meaning is given more clearly, though in technical language, in 413 b 18 ὥς οὕσης τῆς ἐν τούτοις ψυχῆς ἐντελεχείᾳ μὲν μίᾳς ἐν ἐκάστῳ φυτῷ, δυνάμει δὲ πλείονων: the "parts" of the vegetative soul, nutritive, augmentative, reproductive, are inseparable from one another, i.e. the vegetative soul is in actuality one. But, as it is at the same time potentially plural, it is capable of division, i.e. upon segmentation all the parts of this vegetative soul are found in each segment: in the segments of the worm not only τὸ θρεπτικόν, but τὸ αἰσθητικόν, τὸ κινητικόν κατὰ τόπον and τὸ ὀρεκτικόν reappear in each segment, 413 b 21—23, so that they must be inseparable from each other. Thus the soul of a worm is divisible εἰς ὁμοιομερῆ, like a chemical compound, the parts of which, being constituted of the same elements in the same proportion, are represented by the same formula as the whole.

b 28. ἀρχή. Cf. 402 a 6, 413 a 26 δύνανται καὶ ἀρχὴν τοιαύτην, 413 b 1, 12, 415 b 8, 14, 416 b 18, cited in *note* on b 23. The comparison shows that either the whole soul or any single faculty, part or grade of soul is designated ἀρχή and αἰτία. We are again being led up to the notion of various grades of soul fully expounded below (II., cc. 2, 3), the two here mentioned being the "vegetative" and the "sensitive."

b 28. ψυχὴ τις. In Bk II., cc. 2—4 this ἀρχή is occasionally styled a faculty (δύναμις) and again a part (μέριον) of the soul. The discussion in 413 b 13—414 a 3 leaves no doubt in what sense these various terms are applied.

b 30. αἰσθησιν δ' οὐθὲν ἄνευ ταύτης ἔχει. Here we have the characteristic feature of A.'s classification of these psychic "principles" or "faculties." You can have the lower grades of soul without the higher, but you cannot have the higher without the lower. Cf. 413 b 1—10, 414 a 32 sqq. This is all the reply we get at present to the further question propounded 411 b 3—5.

## BOOK II. CHAPTER I.

**412 a 3—6.** In Book II. A. passes from his historical review of previous opinions to direct exposition [§ 1].

Alexander's own *De Anima* now becomes a subsidiary aid of great value. The commentary of Zabarella is continuous to the end of c. 7. We have no such detailed exposition by either of these authors of Book I., cc. 2—5.

**412 a 4.** ἐπανίωμεν. We return to the questions enumerated in Book I., c. 1. Cf. the opening words of I., c. 2. (403 b 21) προελθόντας, τὰς τῶν προτέρων κτέ. It is important, however, to remember that we are more concerned in this chapter to determine how much we include under the term soul, than to establish a given theory of soul. We have first to decide one of the questions raised in I., c. 1, viz. whether all manifestations of life should be referred to soul, or whether, like most of our predecessors, we should restrict soul to certain of the vital functions, e.g. motion and cognition. Even at the close of the chapter Aristotle is careful not to commit himself to the theory that soul is a separate entity (413 a 8 ἔτι δὲ ἀδελον εἰ κτέ.).

**a 5.** διορίσαι τί ἐστι. This was the problem proposed in 402 a 8, 402 a 23, 402 b 5 sqq., 402 b 16 sqq. κοινότητος λόγος. Cf. 402 b 5—8, where the doubts expressed justify the superlative κοινότητος, as general a definition as may be, considering the gradations of soul, already hinted at in Book I. (410 b 19—27) and to be expounded in cc. 2, 3 of the present book.

**412 a 6—413 a 10.** The definition of soul.

**412 a 6—11.** Our starting point is substance, which can be analysed into matter and form, matter being potentiality and form actuality [§ 2].

This, perhaps the most characteristic of A.'s metaphysical doctrines, is fully expounded in *Metaph.* Z., H. and Δ., cc. 1—5, where οὐσία is analysed into matter, form and a compound of the two. Here, as often, the doctrine is not expounded, but taken for granted.

**a 6.** γένος ἐν τῷ τῶν ὄντων. This is fully explained in the *Categories*, cc. 2—5. In fact, the doctrine of the *Categories* is briefly that anything which can be spoken of is either substance or one of the appendages of substance, quality, quantity and relation being the most important of these appendages. Cf. *Metaph.* 1069 a 19 καὶ γὰρ εἰ ὡς ὅλον τι τὸ πᾶν, ἡ οὐσία πρῶτον μέρος· καὶ εἰ τῷ ἐφεξῆς, κἂν οὕτω πρῶτον ἡ οὐσία, εἴτα τὸ ποῖον, εἴτα τὸ ποσόν. ἅμα δ' οὐδ' ὄντα ὡς ἀπλῶς εἰπεῖν ταῦτα, ἀλλὰ ποιότητες καὶ κινήσεις. By γένος ἐν τῷ is meant simply "one class," while γένος ἐν γέ τῷ would mean "some one class."

**a 7.** ταύτης δὲ. Substance is often analysed, as here, into matter and form. It may be useful to compare the different statements in *Metaph.* 1029 a 1—9, 1035 a 1—9, 1042 a 26—31, 1043 a 26—1043 b 4, 1070 a 9 sqq. Cf. first note on 403 b 2, and generally 403 b 2—19 with notes. τὸ μὲν, int. λέγομεν οὐσίαν. καθ' αὐτὸ μὲν. This is an instance of μὲν solitarium, as in 418 a 14.

**a 7.** τόδε τι, "a determinate something." A technical expression for a concrete particular thing. From this man, this house, this tree, this stone we

generalize "this something." The importance of the technical term consists in the Aristotelian doctrine that it is in such concrete particulars and not in universals that reality primarily resides. Matter considered in itself is indeterminate unless and until it is determined by union with form.

a 8. *μορφήν καὶ εἶδος*. By these two terms Aristotle indicated his formal cause, which is always correlative to matter, determining and actualising matter which would otherwise, or in itself, be indefinite and potential. *μορφή*, "shape," is comparatively seldom used alone (*καὶ* is of course explanatory, "in that is to say"), but it is less ambiguous than *εἶδος*, which serves for "species" as opposed to "genus," to say nothing of its perpetual use to denote the Platonic idea. More frequent is the combination here used. Cf. *Metaph.* 1033 b 5 *φανερὸν ἄρα ὅτι οὐδὲ τὸ εἶδος, ἢ ὅτιδήποτε χρὴ καλεῖν τὴν ἐν τῷ αἰσθητῷ μορφήν, οὐ γίγνεται*. The two terms are combined, *μορφή* as here coming first, in *Phys.* II. 1, 193 a 30 sq., *De Gen. et Corr.* II. 9, 335 b 6, *Metaph.* 1017 b 25 sq., 1052 a 22 sq.; quite as often *εἶδος* precedes *μορφή*, and that the order is indifferent appears from *De Cael.* I. 9, 278 a 14 sqq. *καὶ τὸ μὲν ὡς εἶδος καὶ μορφή τὸ δ' ὡς τῇ ὕλῃ μεμιγμένον. ὧν δ' ἐστὶ μορφή τις καὶ εἶδος, κτέ.*

a 8. *καθ' ἣν*, i.e. *κατὰ τὴν μορφήν*. The sense of the preposition is "in virtue of," as in 406 a 4. Without form there can be no determination, no definite thing. *λέγεται τόδε τι*, "a particular existence is so called." From the preceding line we expect *τόδε τι* to be predicate: if so, it is also subject. Particularity belongs to nothing except the form (which is excluded by *καθ' ἣν*) and the concrete particular thing in which the form resides. Some would say that *τὸ μὲν, οὐσία ὡς ὕλη*, is subject: but matter is not "this something" by itself, and its union with form constitutes just the very *οὐσία* under analysis, *τὸ ἐξ ἀμφοῖν*. However, *λέγειν* can be used without asserting a predicate of a subject, both in the active, 417 a 10, and more often in the passive with a causal dative, *Metaph.* 1018 a 31 sq. (cf. 1017 a 19 sq.), or an adverbial phrase. Thus *ταῦτα λέγεται* means simply "These things are spoken of," "these terms are used," in this or that way: *κατὰ μεταφορὰν* 420 a 29, *κατ' ἀριθμὸν, κατὰ τὸ ἐν* *Metaph.* 1021 a 8 sq., 10, *πολλὰχῶς* 415 b 8 sq., 426 a 26, 412 a 22, 414 a 14. This is confirmed by a modal or conditional clause following 412 a 22, 422 a 26 sq., *Metaph.* 1022 b 4, 22. In 424 a 23, 429 b 6 *λέγεται* should be similarly taken.

a 9. *τρίτον τὸ ἐκ τούτων*. Matter and form are correlative. The substances with which we are concerned are concrete things and their analysis into matter and form is logical only. As Grote says (p. 454, 2nd ed., vol. II., p. 182, 1st ed.), "There can be no real separation between the two: no shape without some solid material; no solid material without some shape. The two are correlates; each of them implying the other, and neither of them admitting of being realised or actualised without the other." And again (p. 454, 2nd ed., vol. II., p. 181 sq., 1st ed.), "This distinction is borrowed from the most familiar facts of the sensible world—the shape of solid objects. When we see or feel a cube of wax, we distinguish the cubic shape from the waxen material; we may find the like shape in many other materials—wood, stone, etc.; we may find the like material in many different shapes—sphere, pyramid, etc.; but the matter has always some shape, and the shape has always some matter. We can name and reason about the matter, without attending to the shape, or distinguishing whether it be cube or sphere; we can name and reason about the shape, without attending to the material shaped, or to any of its various peculiarities." And Them. (39, 13 H., 72, 7 Sp.) concisely presents the concrete thing (*σύνολον*) as *ἀπολαύον τοῦ μὲν γίνεσθαι παρὰ τῆς ὕλης, τοῦ δὲ εἶναι παρὰ τοῦ εἶδους. ἡ μὲν ὕλη... τοῦ ἐντελέχεια*. The antithesis of form and matter is presented in another



way as corresponding to that between potentiality and actualisation (realisation). The latter pair of terms may be no clearer than the former, but they are capable of a far wider application.

**a 10. καὶ τοῦτο διχῶς.** That is, there are two senses of actuality; a remark which in a modern book would be relegated to a footnote. Cf. 412 b 1 sqq., 415 b 2. Take the case of knowledge. The student who has a capacity for learning, has only potential knowledge when compared with one who has gone through a course of study. Here *ἐπιστήμη* is related to *ἀγνοία* as actual to potential. But the student who has learned is not always exercising his knowledge, and his possession of latent knowledge without the application stands to his actual exercise of knowledge in contemplation (*θεωρεῖν*) as potential to actual. Obviously the latter knowledge is more perfectly realised. The former, the possession of knowledge real but latent, is an inchoate, provisional actualisation. Cf. 417 a 21—29.

**412 a 11—b 6.** Bodies have the best claim to rank as substances, especially such as are the work of nature, other bodies being derivative from these. A body that grows and decays of itself, and is self-nourished, is a substance compounded of form and matter [§ 3]. A body thus qualified by the possession of life cannot be identical with soul, as body is not an attribute, but a subject or substratum of attributes. That is, in the living organism, the body is *οὐσία ὡς ὕλη*. It follows then that soul must be *οὐσία ὡς εἶδος*. We define it as the form of a natural body potentially possessed of life. But such a substance is actual, not potential [§ 4]; and of the two senses of actuality it is analogous rather to knowledge than to the exercise of knowledge in contemplation of the thing known. For in sleep there is no exercise of faculties, whereas both sleep and waking are compatible with the presence of soul. Knowledge, again, in order of development, is acquired before it can be exercised. Accordingly our definition may now be modified as follows: soul is the primary actuality of a natural body potentially possessed of life [§ 5], i.e. of a natural body furnished with organs [§ 6].

The cogency of this reasoning depends upon two assumptions: (1) that *οὐσία ἡ μάλιστα* = *σῶμα φυσικόν*, (2) that *σῶμα φυσικὸν ζῶν ἔχον* = *ζῶον ἐμψυχον*. The body, of which it is said that it cannot be soul, is the animate body, which is the subject (*ὑποκείμενον*) of the attribute "life," which it is further assumed implies "soul." It could be wished that the last assumption had been definitely stated by Aristotle. There is yet one further assumption, viz. that soul is a substance (*οὐσία*). Some ancient commentators, recognising this, affirm that this has been proved in Book I. (the probable reference being to 408 b 18 *ὁ δὲ νοῦς ὅτι ἐγγίνεσθαι οὐσία τις οὐσα*). Here again the absence of a distinct statement is to be regretted. Fortunately the rather arid discussion of II, c. 1 receives much needed elucidation when Aristotle goes over the whole question again in c. 2, 414 a 4 sqq., and some at least of the omissions just noticed are made good. Thus the connexion between life and soul is made clearer. The soul is that whereby in a primary sense we live and perceive and think, and again (cf. 413 a 21 sq.) that which has soul (*τὸ ἐμψυχον*) differs from the inanimate (*τὸ ἄψυχον*) by the presence of life (*τῷ ζῆν*). Later on (414 a 14—19) we have the most distinct recognition that the living organism is the composite substance of which life and soul are attributes. The argument there runs parallel to that in 412 a 16—22, but the necessary link in the chain is inserted 414 a 14 *τριχῶς γὰρ λεγομένης τῆς οὐσίας... ὧν τὸ μὲν εἶδος, τὸ δὲ ὕλη, τὸ δὲ ἐξ ἀμφοῖν, τούτων δ' ἡ μὲν ὕλη δύναμις, τὸ δὲ εἶδος ἐντελέχεια, ἐπεὶ τὸ ἐξ ἀμφοῖν ἐμψυχον, οὐ τὸ σῶμα ἐστὶν ἐντελέχεια ψυχῆς, ἀλλ' αὕτη σῶματός τινος*.

412 a 11. οὐσίαι. Natural bodies are the commonest case of substances; artificial objects are made out of them, and mathematical objects are obtained by abstraction from them. The sequel shows that it is οὐσία φθαρτή which is here subjected to division (cf. *Metaph.* 1069 a 30 sqq.), οὐσία ἀφθαρτος or αἰδιος being left out of account. μάλιστα εἶναι δοκοῦσι τὰ σώματα. So *Metaph.* 1028 b 8, where, however, the phrase is δοκεῖ ἡ οὐσία ὑπάρχειν φανερώτατα μὲν τοῖς σώμασιν, a phrase which elucidates the meaning of οὐσίαι δοκοῦσιν εἶναι τὰ σώματα here: also 1042 a 6 sqq., where αἱ φυσικαὶ οὐσίαι are said to be ὁμολογούμεναι ὑπὸ πάντων. The whole chapter *Metaph.* H., c. 1, especially 1042 a 3—31, should be carefully compared with the present passage.

a 13. ἔχει ζωὴν. Note that this means capacity for life, the division being not into living and dead, but into animate and inanimate. In fact by σῶμα ζωὴν ἔχον or μετέχον ζωῆς A. means ἐμψυχον σῶμα. He has not explicitly stated this, but it is required by the argument.

a 15. ὥστε. This restates what was said above. Living bodies have as much claim to be considered substance as inorganic bodies.

a 16. ὡς συνθέτη, i.e. compounded of matter and form. See note on τρίτον τὸ ἐκ τούτων 412 a 9.

a 16. ἐπεὶ δ'. What is the subject? Probably τὸ φυσικὸν σῶμα μετέχον ζωῆς, i.e. what is afterwards called the body fitted with instruments for living. There is no doubt that it was the want of a definitely expressed subject which led to the insertion of τοῦτο in some inferior MSS. The predicate is καὶ σῶμα τοιόνδε, which some interpret "not only a body, but also a body of a given kind, namely, capable of life." Cf. ἀλλ' αὕτη σώματος τινος 414 a 18. More probably καὶ emphasises, meaning "in fact." Life is the ποιότης and virtually the form of such a body. From these premisses, the inference which we expect is that the body itself cannot be the quality (i.e. practically the form) of this concrete organism. Cf. Mr Innes, *Cl. R.* vol. XVI. p. 462, who would boldly substitute εἶδος for a 17 ἡ ψυχῇ.

a 17. οὐκ ἂν εἴη τὸ σῶμα ἡ ψυχῇ. In this passage A. passes from identifying every natural body possessed of life with his composite substance to the definition of soul as the form of such a body. I understand the steps to be these. As we have seen, a composite substance has two factors or components. In the case of the animal, or natural body possessed of life, we are in no doubt as to what A. regarded as these two factors. His expressions vary: sometimes soul and body make up the whole animal, sometimes it is soul in body, here it is animate body or rather living body; but all these mean the same. What A. has to do then is simply to separate the two and determine which is form, which matter. If we know that we have the two factors or components, if there is good reason to identify the one with matter, the other must be form, provided the analysis into two components was correct. Here it is into logical subject and essential predicate, together making "living body." To avoid mistakes we must enquire if living is wholly distinct from body. For if body implies life, we are not analysing properly, some part of the subject being itself a predicate in that case. But this, we are assured, is precluded: the body, the one component, is always subject and never predicate. This being so, the correctness of the analysis being guaranteed, the following inferences can be made: (1) the composite substance or animal has body for one factor and the cause of its life, which we call soul, for the other, (2) these two are not identical but distinct, (3) the body is substance as matter, and hence (4) the other factor, soul, is substance as form.

On this explanation the soul means  $\phi$  ζῶμεν (cf. 414 a 12), the origin, ἀρχή,

of life in the living animal. Up to this point A. has denoted the composite substance or σύνολον by σῶμα. He can hardly be said to desert this meaning even here, for the body, which is matter (or rather substance as matter) of the compound, is the living body. But when he comes to apply the powerful solvent of analysis, and to investigate λογικῶς, he regards this living body, γυμὰ body, as not the entire compound, but only as that part of it which is matter. The inference from "logical subject, never predicate" to "matter of a σύνολον," is a hazardous step. Cf., however, *Metaph.* 1028 b 36—1029 a 9, where οὐσία=τὸ μὴ καθ' ὑποκειμένου ἀλλὰ καθ' οὗ τὰ ἄλλα. But matter, form, and the compound of the two all claim to be οὐσία as τὸ ὑποκείμενον πρώτων: 1029 a 20, ὅλη καθ' αὐτήν is none of the categories, 1038 b 4—6, in different senses both τόδε τι and its factor, ὅλη, can be called ὑποκείμενον, 1029 a 21 ἔστι γάρ τι καθ' οὗ κατηγορεῖται τούτων ἕκαστον, ὅτι τὸ εἶναι ἕτερον καὶ τῶν κατηγοριῶν ἕκαστον· τὰ μὲν γὰρ ἄλλα τῆς οὐσίας κατηγορεῖται, αὕτη δὲ τῆς ὅλης. ὥστε τὸ ἔσχατον καθ' αὐτὸ οὔτε τί οὔτε ποσὸν οὔτε ἄλλο οὐδὲν ἐστίν. The body of τὸ ζῶν ἔχον is compounded of the elements blended in ὁμοιομερῇ: the parts, into which it is divisible and into which at the dissolution of the compound it is disintegrated, are material, e.g. such parts as bones, flesh, sinew or the like, which when the compound has ceased to exist as a compound are mere dead matter. Cf. *Meteor.* IV., c. 12, *Metaph.* 1035 a 17—21, 31 sqq., 1035 b 19—22, 30. Form and matter being relative conceptions, that which is form in one aspect or in one compound may itself be the matter of another compound. That Alex. Aphr. considered the analysis of composite substance into its two factors to be a step in the argument seems clear from his summary statement, *De An. Mantissa* 102, 11, in which he follows the progress of this chapter, while incorporating some things from elsewhere: εἰ δὲ κατὰ μηδέτερον τῶνδε τῶν τρόπων [i.e. as a whole is made up of parts or a mixture of its ingredients, cf. Alex. *De An.* 11, 15, Them. 40, 14 sqq. H., 73, 29 sqq. Sp.] τὸ ζῶν οὐσία σύνθετος, κατὰ τὸν τρίτον λείπεται ἄρα. ἦν δ' οἷτος, καθ' ὃν ἦν τοῦ συγκεκimenού το μὲν ὑποκείμενόν τε καὶ ὅλη, τὸ δὲ εἶδος...τὸ ἄρα ζῶν, συγκεκimenον ἐκ ψυχῆς τε καὶ σώματος, τῷ τὸ μὲν ὑποκείμενον τούτων εἶναι, τὸ δὲ εἶδος, ἐκ τούτων ἔχει τὴν σύνθεσιν. λείπεται δὴ ἡ τὸ σῶμα τῆς ψυχῆς εἶδος εἶναι, ἡ τὴν ψυχὴν τοῦ σώματος. ἀλλὰ τὸ μὲν σῶμα τῆς ψυχῆς εἶδος λέγειν ἀδύνατον· ὑποκείμενον γὰρ τὸ σῶμα.

The insertion of ἡ before ψυχὴ has some MS. authority, and, according to Philop., whose testimony to the article both with σῶμα and with ψυχὴ in his own text is explicit (215, 11, 18, 22, 32), Alex. Aphr. made ἡ ψυχὴ the subject of this sentence and σῶμα the predicate (Philop. 215, 23 sqq.). Cf. Philop. 215, 25 διὰ γὰρ τοῦ δεῖξαι, φησὶν [ὁ Ἀλέξανδρος], ὅτι οὐ σῶμα, συναποδείκνυσιν ὅτι οὐδὲ ὑποκείμενον. This statement respecting Alex. Aphr. seems to me to be strongly confirmed by Alex. Aphr. himself, *De An. Mantissa*, p. 121, 2—15. The comment of Simpl. affords little evidence, for it would be unsafe to build too much upon the words (86, 8) ἡ δὲ ψυχὴ κατὰ τὴν ζῶν καὶ οὐ κατὰ τὸ σῶμα: while Them., as is shown by the citation in the critical notes, varies the wording of his paraphrase. Sophonias here, as often, agrees closely with cod. E. The belief that somehow A. is here proving that the soul is not body, σῶμα being taken to stand for ὑποκείμενον καὶ ὅλη, is shared by Alex., Them. (40, 4 sqq. H., 73, 14 sqq. Sp.) and Philop., and I do not see how this belief can be accounted for unless the text which they had read ἡ ψυχὴ. That with the reading of cod. E before them they should have deliberately ignored the article before σῶμα and made ψυχὴ the subject, τὸ σῶμα the predicate, seems well-nigh incredible. If ἡ ψυχὴ is genuine, the article might be omitted by carelessness or by deliberate intention, to make clear that τὸ σῶμα was the subject. The presence of the article with

both σῶμα and ψυχή would explain why some took the one, some the other, for subject. The parallel passage, 414 a 17 sq. οὐ τὸ σῶμά ἐστιν ἐντελέχεια ψυχῆς, favours the view that τὸ σῶμα in our present passage is the subject, as it has been in the immediate context. Many translate the text of cod. E "soul will not be body," i.e. "will be incorporeal," which on grammatical grounds is hardly justifiable, unless we are prepared with Zeller, *Archiv f. G. d. Ph.* IX. p. 538, to omit the article before σῶμα and understand, if not supply, it with ψυχή. The order of the words is no impediment to taking ἡ ψυχή as the subject, as is shown by 408 a 20 πότερον ὁ λόγος (predicate) ἐστὶν ἡ ψυχή (subject), ἢ μᾶλλον ἑτέρον τι οὐσα κτέ. Zabarella, however, well remarks that body may be taken in three senses, viz., as (1) the animate body, the compound (Alex. Simpl.), (2) that which in the animate compound corresponds to matter (τὸ ὑποκείμενον καὶ ἡ ὕλη Philop. 215, 34), and (3) a corporeal entity distinct from (2), such as the early philosophers intended when they described the soul as the thinnest and rarest of substances. In senses (1) and (2), he says, no one ever maintained that the soul was corporeal, but only in sense (3). If A. really intends to show that soul is not corporeal, he must show that it is not so in any one of these three ways. The proof, as presented by Simpl., is inconclusive. And similarly the ancients might easily refute the proof as given by Philop., "You prove that the soul is not the body, say, of a man, that this body is matter, and that therefore the soul is form. But I say that, although the soul is not the body, which is matter, yet it is matter of another, rarer kind. Why should it be form?" It is only from the universal negative, "No A is B," that you can infer "No B is A." Body being sensible and therefore more evident than soul, it is easier to prove the universal negative of body than of soul. Thus, according to Zabarella, A.'s argument requires him to prove that the soul is not body, and this he does by proving that body in all three senses of the term is not soul. This view is ingenious, but the more natural inference from Zabarella's arguments would be that A. is not here endeavouring to prove soul to be incorporeal at all: if, as I have argued, A. is analysing the composite whole into its two factors, and asserting them to be quite distinct, there is no need to assume that soul must be the subject, nor to excogitate a meaning for body which will fit the assumption.

α 18. τῶν καθ' ὑποκειμένου, int. λεγομένων. Attributes and qualities, genus and differentia, are predicated of actually existing things, and the latter are bodies: cf. 432 a 3 sqq., *Metaph.* 1028 a 18 sqq., 1029 a 10—27, 1001 b 29 τὰ μὲν γὰρ πάθη καὶ αἱ κινήσεις καὶ τὰ πρὸς τι καὶ αἱ διαθέσεις καὶ οἱ λόγοι οὐδενὸς δοκοῦσιν εἶναι οὐσίαν σημαίνειν· λέγονται γὰρ πάντα καθ' ὑποκειμένου τινός, καὶ οὐδὲν τόδε τι. The context extends the same argument to the so-called elements or ἀπλὰ σώματα (1001 b 32—1002 a 4), which are affirmed to be body with various attributes, such as heat and cold. Since καθ' ὑποκειμένου, not ἐν ὑποκειμένῳ, is employed, life in the living body is treated as an essential predicate and not as an accident. See *Categ.*, c. 2. The relation of form to matter and of accident to subject is in some points similar, in some dissimilar. Both form and accident need something in which to inhere if they are actually to exist, if the form is to be realised (403 b 3), both being incorporeal *per se*. But matter equally needs form if it is to exist, the interdependence is mutual, and whereas the subject of an accident can exist independently of it, the accident cannot exist independently of a subject. Again, the subject in which an accident inheres is actually existent, while the matter of a composite substance is only potentially existent (413 a 2 τὸ δὲ σῶμα τὸ δυνάμει ὂν) unless or until form supervenes and actualises it. If A.'s object were, as some suppose, to prove

that soul is form as distinct from accident, nothing could legitimately be inferred from a middle term *εἶναι ἐν ὑποκειμένῳ*, which is all we know of soul so far, a 13—17. The unguarded point in the argument gives occasion for Alex. Aphr. to write his two essays, *ὅτι οὐκ ἐν ὑποκειμένῳ ἡ ψυχὴ*, *De An. Mantissa*, 119, 21 sqq., *πρὸς τὸ μὴ εἶναι τὸ εἶδος ἐν τῇ ὕλῃ ὡς ἐν ὑποκειμένῳ*, *ἀπ. καὶ λύσ.* I. 8, p. 17. Cf. also his *De An.* 13, 9 sqq.

a 18. *μᾶλλον δ'*. It is rather, so to say, a substratum in which attributes inhere, i.e. matter. The specific attribute of living body is capacity for vital functions. Cf. 412 b 25 sq. As explained in *Metaph.* 1038 b 5, *τὸ ὑποκείμενον* may mean either the composite whole as the subject of attributes, or matter as the substratum of actuality: *διχῶς ὑπόκειται, ἢ τόδε τι ὂν, ὥσπερ τὸ ζῶον τοῖς πάθεσιν, ἢ ὡς ἡ ὕλη τῇ ἐντελεχείᾳ*. Cf. also *Metaph.* 1088 a 17—21, *πάθη et συμβεβηκότα dist. ὑποκείμενον*.

a 19. *ἄρα*. If the living body, *quā* body, is the substratum or matter, soul is the form. The inference depends on the implications of composite substance above explained, a 6 sqq. The composite substance before us is thought of and spoken of as *σῶμα τοιόνδε*, not as *ψυχὴ τοιάδε*, as *σῶμα ἔμψυχον*, never as *ψυχὴ ἐνσώματος*. If, then, we are justified in identifying *οὐσία ὡς ὕλη* with the body, *οὐσία ὡς εἶδος* must be soul, the *ἀρχὴ* which causes such *οὐσία ὡς ὕλη* to have life predicated of it, and by thus determining indeterminate matter converts it into *τόδε τι*. Or we may express the same inference more shortly thus: the animal consists of body and soul (413 a 3, *Metaph.* *saep̄*) or soul in body (1043 a 34 sq.), and as soon as we know that an animal is composite substance and body is matter, it follows that soul is the other factor, form. Cf. Alex. Aphr. *De Anima* 11, 14—12, 7 and 13, 9—15, 29, *ἀπ. καὶ λύσ.* I. 8, p. 17, II. 24, p. 74. I cite from the latter (76, 7) *δείξας ὅτι ἡ ψυχὴ οὕτε σῶμα οὐθ' ὑποκείμενον ἐν τῷ ζῳῳ, ἔδειξεν ὅτι ἡ κατὰ τὸ εἶδος οὐσία ἐστὶ ψυχὴ· δεῖ γὰρ αὐτὴν ἢ ὡς εἶδος ἢ ὡς ὕλην εἶναι ἐν αὐτῷ*.

a 20. *δυνάμει*. Cf. 412 b 25—27 and *notes*. Why this word is added may be seen by considering the distinction between the living body, which is *ἔμψυχον*, "has soul in it," and the *ἄψυχον*. Growth and self-nurture are functions which the one can and does, and the other cannot, exercise. Cf. 415 b 8. On *δυνάμει* Zabarella remarks that it must not be understood as opposed to *actus* or *ἐντελέχεια* and distinct from it, as a man is capable of walking if he is not actually walking: *sumitur in communi, ut amplectatur etiam illam potentiam, quae est simul cum actu*. So *Theom.* 42, 27 H., 78, 7 Sp. *εἰ δὲ ἀντὶ τοῦ ὀργανικοῦ τὸ δυνάμει ζῶν ἔχοντος ἐθέλοις λαμβάνειν, ληπτέον ἐνταῦθά σοι δυνάμει τῇ παρούσῃ, ἢ δὴ ὑποβέβληται ἐνέργεια, ὡς λέγεται δυνατόν εἶναι βαδίζειν, ὃ τι βαδίζει, καὶ ὅπως δυνατόν εἶναι, ὃ τι ἤδη ἐστὶ κατ' ἐνέργειαν· ἦν γὰρ καὶ οὗτος ὁ τρόπος τοῦ δυνατοῦ, ὥσπερ εἰρηται ἐν τοῖς περὶ προτάσεων. Heinze gives *Anal. Pr.* I. 3, 25 a 38 as the reference. But a more satisfactory voucher is *De Interpr.* 13, 23 a 3 sqq., especially a 7 *τὸ γὰρ δυνατόν οὐχ ἀπλῶς λέγεται, ἀλλὰ τὸ μὲν ὅτι ἀληθὲς ὡς ἐνέργεια ὂν, οἷον δυνατόν βαδίζειν ὅτι βαδίζει, καὶ ὅπως δυνατόν εἶναι ὅτι ἤδη ἐστὶ κατ' ἐνέργειαν ὃ λέγεται εἶναι δυνατόν, τὸ δὲ ὅτι ἐνεργήσκειν ἂν, οἷον δυνατόν εἶναι βαδίζειν ὅτι βαδίσκειν ἂν*. Here Zabarella follows Alex. Aphr.: *De An. Mantissa* 104, 11 *ὅταν δὲ λέγωμεν τὴν ψυχὴν εἶναι σώματος φυσικοῦ δυνάμει ζῶν ἔχοντος, οὐχ οὕτως τὸ δυνάμει κατηγοροῦμεν τοῦ σώματος τότε, ὡς εἴδομεν λέγειν ἐπὶ τῶν μηδέπω μὲν ἔχόντων τι, ἐπιτηδεῖων δὲ πρὸς τὸ δέξασθαι. οὐ γὰρ ἐστὶ τὸ σῶμα τοῦτο χωρὶς ψυχῆς πρότερον, εἴτα δέχεται τὴν ψυχὴν, ἀλλ' ἔστιν τὸ δυνάμει ζῶν ἔχον τὸ δυνάμενον ζῆν, τοῦτέστιν τὸ ἔχον ὄργανα πρὸς τὰς κατὰ τὸ ζῆν ἐνεργείας καὶ ἔστιν ἴσον τὸ 'δυνάμει ζῶν ἔχον' τῷ 'ὀργανικόν,' *De An.* 16, 12—18 διὰ τὸ ὀργανικὸν σῶμα καὶ δυνάμει ζῶν ἔχειν λέγειν, τῷ δυνάμει ζῶν ἔχον ἀντὶ τοῦ δυναμένου κατ' ἐνέργειαν ζῆν χρώμενος. τὸ γὰρ ἤδη τὴν τέλειον ψυχὴν ἔχον πολλὰ κατ' αὐτὴν**

δύναται ποιεῖν τε καὶ πάσχειν... ἔστι τὸ δυνάμει, τὸ προσκείμενον, τῆς πρώτης ἐντελεχείας δηλωτικόν. Cf. ἀπ. καὶ λύσ. II. 8, p. 54, where Alex. remarks that ζῶν ἔχειν and ψυχὴν ἔχειν are not the same (54, 15), τὸ μὲν ἐνεργές ἡ ζωὴ, ὅτι 'ἡ δὲ αὐτοῦ τροφή τε καὶ αὔξησις,' τὸ δὲ δυνάμει ζῶν ἔχον λέγουτ' ἂν τὸ ὀργανικὸν ἔχον δι' αὐτοῦ [πρὸς] τὸ δύνασθαι τρέφεσθαι τε καὶ αὔξεσθαι. If ὀργανικόν, which later replaces δυνάμει ζῶν ἔχον, is an exact equivalent, it is hard to see how σῶμα φυσικὸν ὀργανικὸν ceases to be ὀργανικόν when it is actively operant. Zabarella claims for this interpretation that it clears up the difficulties of the vegetative soul, which is never *in potentia ad operandum*, but always actively operant. Cf. e.g. 413 a 30, *De Gen. et Corr.* I. 5, 322 a 24 sq.

a 21. ἡ δ' οὐσία, i.e. ἡ ὡς εἶδος οὐσία just mentioned. Form, as we were told above (412 a 9 sq.), is ἐντελέχεια, as matter is δύναμις. τοιούτου, such as we described, i.e. φυσικοῦ δυνάμει ζῶν ἔχοντος. The subject of the sentence is, of course, the soul. The soul is that which makes the corporeal part of the animal actual and differentiates the animate from the inanimate body. The utility of this remark turns on the contrast with the views of preceding philosophers. Some regarded soul solely as the cause of motion in the body, some as percipient only. It may be with reason objected that this is an identical proposition and no more than a restatement of the problem to be solved. No definition is valid if it virtually repeats the term to be defined. τοιούτου here implies ἐμφύχου. See note on 414 a 28.

a 22. αὕτη δὲ λέγεται διχῶς, as stated 412 a 10 sq. See on 412 a 8.

a 23. φανερόν οὖν ὅτι ὡς ἐπιστήμη, int. ἡ ψυχὴ σώματος ἐντελεχεία ἐστι. The point reached in the argument was: τοιούτου ἄρα σώματος ἐντελέχεια (ἡ ψυχὴ ἐστι) and now we add ὡς ἐπιστήμη (ἀλλ' οὐχ ὡς τὸ θεωρεῖν). The difference between the two is much the same as that between a permanent state or formed habit (ἔξις) and the activities (ἐνέργειαι, ἔργα) in which it manifests itself. Cf. again 417 a 22—29, and *Phys.* VIII. 4, 255 a 33 ἔστι δὲ δυνάμει ἄλλως ὁ μανθάνων ἐπιστήμων καὶ ὁ ἔχων ἤδη καὶ μὴ θεωρῶν. ἐν γὰρ τῷ ὑπάρχειν, "included in the presence, or possession of soul." This means that organisms possessed of soul may be either asleep or awake. In waking hours many psychical activities will be manifested, of which in sleep there is only the latent capacity. Soul is, by the definition, "the activity which, whether displayed or not, is implicit in the living body."

a 26. καὶ μὴ ἐνεργεῖν. The objection has been raised that the lowest stage of soul, the nutritive (τὸ θρεπτικόν), is as active in sleep as in waking hours. Cf. *Eth. Nic.* 1102 b 2 sqq. Further, A.'s "comprehensive definition" takes account of plants which, as he informs us (*De Somno* I, 454 a 15—19), do not share in sleeping and waking, these functions being restricted to those creatures which have the power of sensation. A.'s remark, then, in the text must be taken as referring only to the soul in animals, where τὸ αἰσθητικόν is superadded to τὸ θρεπτικόν. Zabarella observes that it is not knowledge ἀπλῶς which is comparable to sleep, but *scientia non exiens in actum*, knowledge possessed but not applied. προτέρα δὲ τῇ γενέσει. There are several senses of πρότερον καὶ ὑστερον enumerated, among other passages, in *Metaph.* Δ., c. 11, cf. Z., c. 13, 1038 b 27 sq. This sense "prior by birth" or "by becoming" is sometimes expressed as earlier in time (πρότερον τῷ χρόνῳ). Conversely, that which is later in birth is said to be "prior in the order of nature" in *Metaph.* 989 a 15 εἰ δ' ἔστι τὸ τῇ γενέσει ὑστερον τῇ φύσει πρότερον, and in *Metaph.* 1050 a 4 τὰ τῇ γενέσει ὑστερα are said to be τῷ εἶδει καὶ τῇ οὐσίᾳ πρότερα. Here ἐπιστήμη, the ἔξις, is said to be produced earlier than τὸ θεωρεῖν, the active exercise. Knowledge cannot be exercised until it has been first acquired.

a 26. ἐπὶ τοῦ αὐτοῦ, "in the same person." I take the pronoun as masculine with Themistius and Philoponus. It is explained by ἐν τῷ ἐνί, 430 a 21: ἡ δὲ κατὰ δύναμιν (int. ἐπιστήμη) χρόνῳ προτέρα ἐν τῷ ἐνί (int. τῆς κατ' ἐνέργειαν), ὅπως δὲ οὐ χρόνῳ. Philop. 216, 28 sqq. observes that the activity of knowledge in the master precedes the formation of the state of knowledge in the pupil, and that this is why the limitation ἐπὶ τοῦ αὐτοῦ is introduced. But there seems no ground for thinking that such a consideration was present to the mind of A., who obviously is throughout dealing with the individual soul.

a 27. ἡ πρώτη, "the earliest in development." Not only does this meaning directly follow from the words προτέρα δὲ τῇ γενέσει just before, but it agrees with A.'s intention to discover the most comprehensive definition (κοινώτατος λόγος), that is, one applicable to soul even in its simplest, least advanced stage. As a matter of fact we see that it is intended to include the "soul" of a plant (see 411 b 19—30, 414 a 33, 415 a 23—25, 424 a 32—424 b 3) as well as of a sponge or jelly fish (see 410 b 19, 432 b 20, 434 b 2). In *De An. Mantissa* 103, 11—20 Alex. Aphr. makes the difference between ἡ πρώτη ἐντελέχεια and ἡ δευτέρα analogous to the difference between ἔξεις and αἱ κατ' αὐτὰς καὶ ἀπ' αὐτῶν ἐνέργειαι.

Zabarella also discusses the question: what is the difference between *actus primus* and *actus secundus*? He condemns the view of Averroes that the first is *forma non operans*, the other *forma operans*. He himself decides that the second is *operatio*, rather than *forma operans* simply. Both *primus* and *secundus* may, according to him, be *forma operans*, the first giving *esse specificum*, the second *secundam perfectionem quatenus operatur*. This being so, the first entelechy, whether it is or is not operant, equally gives form to matter, and is soul in both cases alike. Hence it does not mean the absence of operating, but merely that soul is considered abstractly, apart from its operation. This same conclusion follows, he urges, from the proper interpretation of δυνάμει ζῶν ἔχοντος. What is inseparable from the animate body, and therefore to be included in the definition, is merely the capacity or aptitude to operate, as distinct from actual operation or its absence. At the same time δύναμις does not mean capacity separated from act, but capacity joined with act. In his own words, "*forma operans est actus primus cum secundo, cum operatio sola sit secundus actus.*" In *Metaph.* 1050 a 21—23 A. himself identifies ἐνέργεια with ἔργον, from which it gets its name, adding that it tends to perfection, συντείνει πρὸς τὴν ἐντελείχειαν.

a 28. ὀργανικόν, provided with organs, whereby are meant instruments subserving the several faculties (cf. the argument in 429 a 26 sq. that νοῦς unlike the sensitive faculty has no such ὄργανον) and adapted to the performance of function (τοῦ ἔργου ἕνεκα). Cf. Alex., ἀπ. καὶ λύσ. 54, 9 τὸ δ' ὀργανικόν ἐστὶν ὃ ἔχει μόρια διαφερούσας ἐνεργείας ὑπηρετεῖσθαι δυνάμενα, and Alex. *De An.* 16, 11 sq. Not only are what we call "organs of sense" ὄργανα to A., but also any parts of the living body which promote vital functions (as mouth, heart, foot) and, as A. goes on to show, the parts of plants, especially the roots. See note on 407 b 25 (δεῖ γὰρ κτέ.). This conception is stereotyped in the term "sense-organs."

412 b 1 ὄργανα δὲ...4 τὴν τροφήν. This is a parenthetical remark showing that the parts of plants serve the same purpose as the recognised "organs" of animals. It is almost as much a footnote incorporated in the text as 412 a 10—11. The simplicity of the structure of plants is accounted for *De Part. An.* II. 10, 655 b 37 sqq.

b 2. περικαρπίου. The pericarp in most edible fruits (e.g. apples, plums,

grapes) is what we call the fruit; in nuts it is the shell, in peas and beans the pod. With more precision from the botanical standpoint, A. reserves the term *καρπὸς* for that which, when sown, will produce the plant after its kind, as the apple pip or the grape stone. The leaf, as a protection of the "pericarp," is well exemplified in the hazel-nut.

b 3. αἱ δὲ ῥίζαι τῷ στόματι ἀνάλογον. Cf. *De Part. An.* iv. 10, 686 b 28 sqq., especially 686 b 32 καὶ τὸ κατὰ τὴν κεφαλὴν μῶριον τέλος ἀκίνητόν ἐστι καὶ ἀνίσθητον, καὶ γίνεται φυτόν, ἔχον τὰ μὲν ἄνω κάτω, τὰ δὲ κάτω ἄνω· αἱ γὰρ ῥίζαι τοῖς φυτοῖς στόματος καὶ κεφαλῆς ἔχουσι δύναμιν κτέ.

... b 4. κοινὸν ἐπὶ πάσης ψυχῆς. Cf. *supra* 412 a 5 κοινότατος λόγος. Again it becomes clear that we are not so much laying down the nature of soul as indicating the scope of the enquiry.

**412 b 6—9.** There is no need to question the unity of soul and body, the one being form, and the other the matter corresponding to it; for that which is in the fullest sense actual possesses being and unity [§ 7].

b 6. διὸ καὶ οὐ. With the foregoing view of the relation of soul to body and that of form to its appropriate matter, it becomes idle to enquire whether soul and body form a unity or are absolutely distinct. The analysis began with concrete things (*οὐσίαι*), which A. calls individuals (*ἄτομα*), implying that they cannot be further divided except in thought. We cannot be too often reminded that matter and form are not things, but "causes" or "principles" of things, distinguishable in thought or reasoning and in rational description (*λόγῳ*), but not by sense.

b 7. τὸν κηρὸν καὶ τὸ σχῆμα. The waxen impression may be regarded either as so much wax (*οὐσία ὡς ὕλη*) or as a form (*σχῆμα*) impressed by the seal. But, howsoever viewed, the thing is numerically one and the same. οὐδ' ὅλως. And, as with the wax and the impress, so universally with every concrete existence, whether sensible (*αἰσθητόν*) or cogitable (*νοητόν*). In *Metaph.* 1075 b 34 A. complains that no preceding philosopher had explained what it is that makes soul and body, or, generally, the thing and its form one: *ἔτι τίνοι οἱ ἀριθμοὶ ἓν ἢ ἡ ψυχὴ καὶ τὸ σῶμα καὶ ὅλως τὸ εἶδος καὶ τὸ πρᾶγμα, οὐδὲν λέγει οὐδεὶς*. He justifies his contention at greater length *Metaph.* 1045 a 7—b 23.

b 8. τὸ οὐ ἢ ὕλη. Cf. b 20 *infra* ὕλη ὅψεως, "the form of which it is the matter," i.e. the form correlative to the matter. Special care is needed or else this expression may be misleading. Properly both the form and the matter are form and matter of the concrete thing, and even where A., as here, incautiously expresses himself, this and nothing else can be his meaning.

b 8. τὸ γὰρ ἓν. The terms "one" and "unity" are susceptible of various meanings, which are discriminated in *Metaph.* Δ., c. 6 and I. cc. 1—3, 1052 a 15 sqq. A. holds that unity is a universal (*καθόλου*). There is no such separate real thing as unity, but there is no real thing of which unity cannot be predicated in some degree, for things possess this attribute in varying degrees. But that which is most properly said to be one and self-identical is *ἐντελέχεια*, that is, the complete actualisation or perfected reality. Contrasted with this, every previous stage of development presents something less perfect, something potential, but half realised and therefore possessing less unity. καὶ τὸ εἶναι. Being, like unity, is a term of various meanings. A.'s enumeration is (1) Being in the sense of the categories, substance and its appendages (quality, quantity, relation), (2) Being in the sense of truth, to which "Not-being" in the sense of falsehood is opposed, (3) Being in the sense of accident (*συμβεβηκός*) or incidental fact, (4) Being in the contrasted senses of "actual" and "potential" (cf. *Metaph.* Δ., c. 7, E., c. 2, Θ., c. 1, 1045 b 27 sqq.). In the present passage



A. tells us that the proper sense of the term is to denote actuality, as distinguished, under the last head, from potential Being.

**412 b 10—25.** This then is the account of soul in general terms. Now to explain it. Soul is substance, regarded as form, that is, the quiddity or the "what-made-it-so" of an animate body. This A. illustrates by taking two things which his definition of natural body excludes, the eye and the axe; the one a mere part of a natural body as whole, the other a lifeless instrument. As vision makes the former what it is, a seeing eye, and its mere cutting makes the latter what it is, these may be regarded as, so to say, the "soul" of eye and axe respectively. Similarly it is in activity or active operation that the soul of the natural body provided with organs, the animal or plant, consists [§§ 8, 9].

**b 10.** οὐσία γὰρ ἡ κατὰ τὸν λόγον = οὐσία ὡς εἶδος, substance expressed in the sense of form or notion. Conversely such definition is called ὁ λόγος τῆς οὐσίας. A true logical definition aims at expressing the form of the thing. It is the form which makes a thing what it is. But as this form, in order to exist, must be realised in matter (403 b 3) οὐσία κατὰ τὸν λόγον is only a factor of concrete existing things, 424 a 24 ἡ τοιουδί, καὶ κατὰ τὸν λόγον. Cf. 414 a 9, where μορφή, εἶδος τι, λόγος and οἶον ἐνέργεια are equivalent expressions. The determining use of κατὰ has been noted *ad* 404 b 5. Cf. *Metaph.* 1089 a 31 sq. τὸ δὲ κατὰ τὰς οὐσίας λεγόμενον, Being predicated of substances.

**b 11.** τὸ τί ἦν εἶναι. This is merely an elaborate technical designation of the specific form or formal cause. The origin of the phrase is plain. A. used (1) the phrase τὸ τί ἐστίν, "the what is it?", for any generic or specific form, any rational description which will answer the question τί ἐστίν; Also, as we saw 408 a 25, he used (2) the phrase τὸ τινὶ εἶναι for the abstract notion, the concept not embodied in matter, the immaterial form of a concrete thing. Again (3) the use of ἦν ἄρα = "it is, as we saw," in recognition of a fact that has existed all along, is well known. The technical phrase before us combines in a manner all the modes of expression; τὸ εἶναι τοιωδὶ σώματι, like (2), will be the abstract being of a given body; τὸ τί ἐστίν εἶναι, if found, would mean the fact of its being what it is. When for ἐστίν, ἦν is substituted, we get (3) "its being what it was all along," i.e. what the thing is in its true essence. Thus τὸ τί ἦν εἶναι τῷ τοιωδὶ σώματι is merely an equivalent of τὸ εἶδος τοῦ τοιουδὶ σώματος. See Zeller's elaborate disquisitions *Aristotle, Eng. Tr.* vol. I. p. 217, n. 1, p. 219, n. 1. The student should note that the predicate of εἶναι both in (2) and (3) is invariably in the dative and that in (2) the article is never found with this dative (τὸ αἰσθητικῷ εἶναι, but not τῷ αἰσθητικῷ εἶναι). As τότε τι generalises "this man," "this horse" etc., so τὸ τί ἦν εἶναι simply generalises τὸ σαρκὶ εἶναι, τὸ ἀνθρώπῳ εἶναι κτέ., τί ἦν being predicate, like σαρκὶ and ἀνθρώπῳ.

**b 11.** τῷ τοιωδὶ σώματι. When the logical essence is expounded, the relation of soul to the animate body furnishes a typical illustration: cf. *Metaph.* 1035 b 14—16, 1041 b 4—9, 1043 a 35—b 4.

**b 12.** φουσικόν. Instead of being, as it is, artificial (τεχνητόν).

**b 13.** τὸ πελέκει εἶναι, axicity or axehood, if we might coin the words; axe in the abstract or the notion or concept of axe; that is, what essentially belongs to an axe as such (and this may serve to explain the dative). τοῦτο, int. τὸ πελέκει εἶναι: the position of the word is due to chiasmus. The οὐσία of the inanimate axe would be called ψυχὴ in the case supposed. Zabarella, however, takes ἡ ψυχὴ to be subject and τοῦτο to be predicate: the sentence is then parenthetical, "and the soul of the animal is this," viz. its quiddity. This agrees with b 16, where ἡ ψυχὴ is the soul of the animal, but in the parallel illustration, b 19, it is said that eyesight would be the soul of the eye, and 413 a 1 the

capacity of the tool is put on a level with eyesight. *χωρισθείσης δὲ ταύτης*, int. *τῆς οὐσίας*. Take this away, i.e. deprive the axe of its capacity for cutting, and it would be a sham axe. This is just as true of the lifeless instrument as it is of the supposed animate instrument, as will be shown later (see *note* on b 15, *νῦν δ' ἐστὶ πέλεκυς*): only in the instrument spoiled for use, e.g. the blunted axe or ruined house, there is not that immediate disintegration which attends the animal body when life has left it: cf. 411 b 9. Since this passes unnoticed in the text, it would seem that the whole clause, b 13 *χωρισθείσης... 14 ὁμωνύμως*, is a mere accessory to the mention of the quiddity (cf. b 20 *ἡ ἀπολειπούσης*). It is on the quiddity alone that the comparison really hinges.

b 14. *ὁμωνύμως*, "in an equivocal, i.e. ambiguous, sense." By homonyms A. denotes things of different nature which have the same name (as bank, form, *λόφος*, *κόρη*), whereas synonyms are identical both in name and nature.

b 15. *νῦν δ' ἐστὶ πέλεκυς*. But in reality the axe is an axe, a lifeless instrument (Philop. 221, 4 *ἄψυχος ὢν*) and not a living body: Them. 42, 25 H., 78, 4 sq. Sp. *νῦν δὲ κὰν σῶζεται ἡ μορφή, πέλεκυς μὲν ἐστὶ, ζῶον δὲ οὐκ ἔστιν*. Cf. Alex. *De An. Mantissa* 102, 23 sqq. Them. does not stop to enquire what such a lifeless instrument is when it has lost its shape, edge and power of cutting; but if all things are defined by their function, it would under those circumstances be spoilt for use. If so, I cannot really see that it is more truly an axe than the wooden saw is a saw: *Meteor.* IV. 12, 390 a 10 *ἀπαντα δ' ἐστὶν ὠρισμένα τῷ ἔργῳ· τὰ μὲν γὰρ δυνάμενα ποιεῖν τὸ αὐτῶν ἔργον ἀληθῶς ἐστὶν ἕκαστα, οἷον ὁ ὀφθαλμὸς εἰ ὀρά, τὸ δὲ μὴ δυνάμενον ὁμωνύμως, οἷον ὁ τεθνεὺς ἢ ὁ λίθινος· οὐδὲ γὰρ πρίων ὁ ξύλινος, ἀλλ' ἢ ὡς εἰκόν.* From this we may infer that the point of *νῦν δὲ* is not to contrast what would happen (1) to a lifeless instrument, (2) to an animate instrument, under the circumstances implied by *χωρισθείσης δὲ ταύτης*, a view to which some colour is lent by the remarks of Simpl. 93, 16 sqq. The question at issue is whether (a) *νῦν δ'* refers back to the initial supposition, b 11 *καθάπερ εἴ τι κτέ.*, and so corrects the hypothesis by showing that the comparison does not hold and why; or whether it refers to the clause immediately preceding, b 13 *χωρισθείσης δὲ ταύτης κτέ.* In the latter case *νῦν δ'* might be taken as equivalent either (β) to *χωρισθείσης τῆς τμητικῆς δυνάμεως*, "although its cutting power was gone," or (γ) to *μὴ χωρισθείσης τῆς τμητικῆς δυνάμεως* = *ἐπεὶ οὐκ ἐχωρίσθη κτέ.* Torstrik, who allows that the first of the three alternatives gives some sense, was deterred from adopting it because (1) the reader could hardly avoid associating *πέλεκυς ἐστὶν* with b 14 *οὐκ ἂν ἔτι πέλεκυς ᾗν*, which would lead him astray as to the sense, and (2) because the clause with *γάρ*, instead of proving that the axe is not a natural body, proves that its form is not a soul. Accordingly he proposed to read *νῦν δ' οὐκ ἔστω* (int. *ψυχὴ τοῦτο*), which he would join closely with b 13 *καὶ ἡ ψυχὴ τοῦτο*, so that the next clause, b 15 *οὐ γὰρ κτέ.*, would follow more directly. This seems hypercritical. Another attempt to make *νῦν δ'* antithetical to b 14 *οὐκ ἂν ἔτι πέλεκυς ᾗν* is that of M. Rodier, who translates: "Mais, en fait, la hache existe (quoique séparée, en un sens, de sa quiddité et de sa fonction, parce que l'essence de la hache, qui n'est pas un corps naturel, ne contient pas la faculté de frapper ou de couper de soi-même)." This rendering seems to me misleading, for *πέλεκυς* must be predicate, not subject; and, even if it were subject, we should require *ἔστιν*, not *ἐστίν*, as the verb. The difference between the lifeless axe and the supposed animate axe is that the former does not, but the latter does, possess the power to strike and cut of itself or on its own initiative. Hence, as M. Rodier says, when it has lost its power of cutting of itself "la hache existe sans cette faculté, précisément parce qu'elle n'est pas un animal, et que son essence ne contient pas la faculté de se

mettre en mouvement d'elle-même." In other words, the axe still exists as an axe: is, in fact, an axe and nothing more, the interpretation of Them., which M. Rodier professes to reject.

b 15. τοιούτου, like the axe just mentioned, i.e. an artificial body (τεχνητού). But soul, the definition carefully states, belongs to a natural body, σώματος φυσικοῦ 412 a 27.

b 16. τοιούδ', of a given kind, namely, that designated ὀργανικὸν in b 6 *σύμψα*.

b 16 ἔχοντος...17 ἐν αὐτῷ. This addition renders more explicit the definition of animate body as φυσικοῦ δυνάμει ζῶντος given above a 20, showing that it includes the possession of τὴν δι' αὐτοῦ τροφήν τε καὶ αὔξησιν καὶ φθίσιν a 14. A. uses automata by way of illustration, *Pol.* 1253 b 33 sqq.

b 18. ἐπὶ τῶν μερῶν, "in the case of the parts (of the body)" above spoken of as ὅργανα and defined by their functions, 416 a 5. Each of these parts is animate; since the whole animal possesses soul, so must every part, if it is to perform its function: *Μετεφρ.* 1036 b 28 αἰσθητὸν γάρ τι τὸ ζῶον, καὶ ἄνευ κινήσεως οὐκ ἔστιν ὀρίσασθαι, διὸ οὐδ' ἄνευ τῶν μερῶν ἔχόντων πως. οὐ γὰρ πάντως τοῦ ἀνθρώπου μέρος ἡ χεὶρ, ἀλλ' ἡ δυναμένη τὸ ἔργον ἀποτελεῖν, ὥστε ἔμφυχος οὐσα· μὴ ἔμφυχος δὲ οὐ μέρος, 1035 b 16—18, 23—25, *De Part. An.* I. 1, 640 b 35 ἔτι δ' ἀδύνατον εἶναι χεῖρα ὁπωσοῦν διακειμένην, οἷον χαλκῆν ἡ ξυλίνην, πλὴν ὁμωνύμως, ὥσπερ τὸν γεγραμμένον ἱατρόν. εἰ γὰρ ἦν...19 αὐτοῦ ἡ ὄψις. That is, sight is to the eye what soul is to the body, i.e. its form.

b 20. ὁ δ' ὀφθαλμός ὕλη ὄψεως, ἥς ἀπολειπούσης οὐκέτ' ὀφθαλμός. The word ὀφθαλμός is used first for the pupil, called κόρη below 413 a 3, the material condition of sight, and then for 'the seeing eye,' the concrete thing. This sudden change in meaning has puzzled readers, and Torst. proposes to insert after ὁ δ' ὀφθαλμός the words τὸ σύνολον, ἡ δὲ κόρη (see critical *notes*). This gives exactly the sense required "while an eye is [a combination of the two and the eyeball is] the matter of vision." Torst. was no doubt influenced by Them., "qui totum locum laudat," as he thinks. Themistius' words are (42, 38 H., 78, 23 Sp.) εἰ γὰρ ἦν ὁ ὀφθαλμός ζῶον, [ἡ] ψυχὴ δὲ αὐτοῦ ἡ ὄψις ἦν· αὕτη γὰρ οὐσία ὀφθαλμοῦ καὶ εἶδος καὶ μορφή, ὁ δὲ ὀφθαλμός τὸ σύνολον, τὸ δὲ σῶμα τοῦ ὀφθαλμοῦ ὕλη τῆς ὄψεως. I see no reason for thinking that Them. had a different text from ours: as usual, he is amplifying and explaining. Even with some such supplement, there is an informality of language (as discussed before, 412 b 8, *note*). It is as if he said  $A+B$  (τὸ σύνολον) is  $A$ , ὕλη, of  $B$ , εἶδος, the ὕλη and εἶδος together making up the σύνολον. See 413 a 2 sq. With ἥς ἀπολειπούσης compare what was said of the axe 412 b 13 χωρισθείσης δὲ ταύτης (int. τῆς οὐσίας τοῦ πελέκεως). With the usual punctuation ἥς is naturally referred to ὄψεως: with that of Bywater (*J. of Ph.* XVII. 54) ἥς would refer back to b 19 οὐσία ὀφθαλμοῦ ἡ κατὰ τὸν λόγον, but, as these words are there introduced to define ὄψις, the result is the same, whichever punctuation be adopted. Very similar is the language of *De Part. An.* I. 1, 641 a 18 ἀπελθούσης γοῦν [int. τῆς ψυχῆς] οὐκέτι ζῶον ἔστιν, οὐδὲ τῶν μορίων οὐδὲν τὸ αὐτὸ λείπεται, πλὴν τῶ σχήματι μόνον, καθάπερ τὰ μυθεύμενα λιθοῦσθαι.

b 22. δεῖ δὴ. "Now what holds good of the part must be applied to the living body taken as a whole" (Wallace, p. 63).

b 23. ὡς τὸ μέρος πρὸς τὸ μέρος, i.e. as the particular mode of perception, sight, stands to the particular organ, the eye. The proportion is, roughly stated: as part of soul is to part of body, so the whole of soul is to the whole of body. See *notes* on 408 a 11, 411 b 15.

b 24. ἡ ὅλη αἰσθησις, sensation as a whole, of which the particular sensory functions are the parts. Each special sense is a faculty residing in some part

of the living body, which serves it as an instrument or organ. So sensation in general, the sum-total of the faculties which constitute an animal sentient, employs the whole body, *quia* sensitive, as its organ and instrument. Cf. *De Part. An.* I. 5, 645 b 14 ἐπεὶ δὲ τὸ μὲν ὄργανον πᾶν ἕνεκά του, τῶν δὲ τοῦ σώματος μορίων ἕκαστον ἕνεκά του, τὸ δ' οὐδ' ἕνεκα πρᾶξις τις, φανερόν ὅτι καὶ τὸ σύνολον σῶμα συνέστηκε πρᾶξέως τινος ἕνεκα πλήρους.

b 25. ἢ τοιοῦτον, i.e. ἢ αἰσθητικόν, 'quia sensitive.'

**412 b 25—27.** What bodies, we may ask, have souls? Living bodies only, for dead bodies as dead are excluded by the terms of the definition. Nor does it apply to the seed or germ of animals or plants which is not as yet possessed of life, although it has the capacity or promise of becoming so hereafter [§ 10].

b 26. τὸ δυνάμει [int. τοιοῦτον] ὅν ὥστε ζῆν, a variant on τὸ δυνάμει ζῶν ἔχον, "that which has the capacity for life," as required by the definition.

b 26. τὸ δὲ σπέρμα καὶ ὁ καρπός. At first sight it would seem as if these, too, were potentially "possessed of life." But in fact they are not as yet bodies (in the sense of the definition) at all; their potentiality is a potentiality of becoming bodies which (when developed) will be "potentially" possessed of life. Them. (43, 10—14 H., 79, 8—14 Sp.) compares the germ to the steel which is not yet a saw, although out of it a saw may hereafter be shaped. A. discusses the question whether the seed has life in *De Gen. An.* II. 1. 735 a 4 sqq. and decides, as here, that it has life potentially. Again, in *Metaph.* Θ., c. 7 he asks πότε δὲ δυνάμει ἐστὶν ἕκαστον καὶ πότε οὐ, and the first instance cited shows that he is thinking of the problem to which we have now come in *De A.*: 1048 b 37 οἶον ἢ γῆ ἀρ' ἐστὶν ἄνθρωπος δυνάμει; ἢ οὐ, ἀλλὰ μᾶλλον ὅταν ᾗδη γένηται σπέρμα, καὶ οὐδὲ τότε ἴσως. This brief answer is further elucidated 1049 a 12 καὶ ὅσων δὴ ἐν αὐτῷ τῷ ἔχοντι, ὅσα μηδενὸς τῶν ἐξωθεν ἐμποδίζοντος ἔσται δι' αὐτοῦ. οἶον τὸ σπέρμα οὕτω· δεῖ γὰρ ἐν ἀλλῃ καὶ μεταβάλλειν. ὅταν δ' ᾗδη διὰ τῆς αὐτοῦ ἀρχῆς ᾗ τοιοῦτον, ᾗδη τοῦτο δυνάμει· ἐκεῖνο δὲ ἐτέρας ἀρχῆς δεῖται.

b 27. δυνάμει τοιονδί. Two stages of potentiality are implied: the seed is δυνάμει the body of the animal or plant, and again this body, so long as it has soul in it, is potentially possessed of life, δυνάμει ζῶν ἔχον. As already pointed out in note on 412 a 20, the present passage supports the interpretation given there, for otherwise the two grades of potentiality could not be kept distinct, there would be no difference between the seed and the plant. But the dead body has neither the first nor the second grade of potentiality. In what sense ζῶν is δυνάμει νεκρόν and a corpse δυνάμει ζῶν, the necessary condition being φθορὰ and reversion to the matter out of which the body was constituted, is explained *Metaph.* 1044 b 34—1045 a 6.

**412 b 27—413 a 10.** Recapitulation of the mutual relations of (1) waking activity, (2) soul, (3) body [§ 11]. The soul and the parts of the soul, which are related to the body and the parts of the body in this way as specific form to specific matter, are incapable of existing separately. If, however, any part of the soul is not so related to the body, it may have a separate existence [§ 12]. There is the further question whether the soul as the specific form of the body stands to it as the sailor to the vessel [§ 13].

412 b 28. ἡ ἐγρηγόρεσις. As we were told before (412 a 25), this is a fuller actuality than the passive possession of the soul in sleep.

413 a 1. ἡ ὄψις, the faculty of sight, as distinguished from ὄρασις, the act of seeing. ἡ δύναμις τοῦ ὀργάνου. The reference is to the cutting power of the axe (even if not being used), as distinguished from τμησις, the operation of cutting. Cf. *Metaph.* 1019 b 13 καὶ γὰρ ἐν τοῖς ἀψύχοις ἐνεστὶν ἡ τοιαύτη δύναμις,

οἶον ἐν τοῖς ὀργάνοις· τὴν μὲν γὰρ δύνασθαι φασὶ φθέγγεσθαι λύραν, where the mention of the lyre shows that the reference is to instruments made by art, and not, as in *De A.* 424 a 25, 28, *De Resp.* 12, 476 a 25, to parts or organs of a living body.

a 2. τὸ δὲ σῶμα. The body corresponds neither to the actual operation of cutting, seeing, etc., nor to the capacity of cutting, seeing, etc. The existence is merely potential. We may note the change in the meaning of σῶμα. In 412 a 11—15 it included animate and inanimate bodies; then it is narrowed to meaning what is now called ζῶον, body possessed of soul; here it means body to the exclusion of soul. Cf. the irregular use of ὀφθαλμός for ὕλη ὄψεως, 412 b 20. See 415 b 18, *note*.

a 4. χωριστὴ τοῦ σώματος. This agrees with *De Gen. An.* II. 3, 736 b 21—27 and the exception following 413 a 6 sq. finds its counterpart in 736 b 27—29.

a 5. ἐνίων γάρ, int. τῶν ζῴων.

a 6. τῶν μερῶν ἐστὶν αὐτῶν, “belongs to the parts themselves” as opposed to the whole body. If these words are rightly placed, we suddenly talk of “parts (μέρη) of the body,” while just before, a 4 ἡ μέρος τινὰ αὐτῆς, we were talking of parts of soul; an anticipation of b 16, where A. speaks of plants and animals having a certain power of living and functioning after division, such organisms being, as it were, built in compartments. The above interpretation is due to Professor H. Jackson and seems to me unquestionably superior to those of the Greek commentators, most of whom apparently make ἐνίων agree with μερῶν. Thus Them. 43, 23 H., 79, 27 Sp. ἐνίων γὰρ μερῶν τοῦ σώματος ἔνια μέρη τῆς ψυχῆς προφανῶς ἐντελέχεια καὶ τελειότης, ὥσπερ ἡ ὄψις τοῦ ὀφθαλμοῦ: cf. Philop. 223, 29 sq. Simplicius, however, though his explanation is substantially the same, seems to admit the possibility of taking ἐνίων apart from τῶν μερῶν: (95, 15) ἐνίων γὰρ λέγων ψυχῶν οὕτως ἔχειν τὴν ἐντελέχειαν, ὥς αὐτῶν τῶν σωματικῶν οὐσαν μερῶν. The words of Soph. (44, 29) ἔνια γὰρ τῶν τῆς ψυχῆς μορίων ἐντελέχεια αὐτῶν τῶν μερῶν ἐστὶ τοῦ σώματος possibly point to a reading ἔνια γὰρ ἐντελέχεια τῶν μερῶν ἐστὶν αὐτῶν, but I see no reason to suspect that Them., Simpl., Philop. had a text different from our own. What these authorities make A. say is no doubt true of the nutritive and sensitive faculties (cf. 403 a 10 sqq.), but I fail to see (1) how such a meaning can be got from our text, (2) why, if this were the meaning, A. should use γάρ. A. would be merely repeating his statement and not assigning a cause. Whereas the fact that, if the bodily parts are divided, there is, in certain cases, a corresponding division of the ἐντελέχεια or soul, does go to strengthen the conclusion 413 a 3 ὅτι μὲν οὖν κτέ.

a 6. ἐνιά γε. By ἔνια=“some” A. in reality means one only, the thinking part, the highest form of intellectual activity, νοῦς, which is declared to be χωριστός 429 b 5, 430 a 17; cf. 408 b 29.

a 8. ἔτι δὲ ἄδηλον. Is this a new question? In other words, does ἔτι δὲ mean “and again” or should ἔτι be taken closely with ἄδηλον in the sense of ἔτι καὶ νῦν, ἔτι καὶ ἐκ τῶν παρόντων? Cf. 413 b 25 οὐδὲν πω φανερόν. On the first view, a new question would be propounded, viz. whether the soul, as we have defined it, is related to the body as a sailor to a ship. At first sight this seems inconsistent with 413 a 3—7. What A. has just declared to be quite certain is that some parts of the soul cannot be separated from the body, but others may, if they satisfy certain conditions. Anyone who had carefully followed the course of the previous argument would expect to hear that the soul is not related to the body as a sailor to a ship. On the other hand, if there is nothing to hinder certain parts of the soul from being separable from the body, it would be

natural to go further and ask if this possibility extends to the whole soul. In the absence of any qualification ἡ ψυχή must be understood of the soul as defined in this chapter. But we shall find that there are other vital functions besides those of self-nourishment and independent growth and decay by which life was defined, 412 a 14 sq. Perhaps ἄδελον has reference to these. A similar question is seriously handled in *Μεταφ. Ζ.*, c. 11, the question there proposed being ποῖα τοῦ εἶδους μέρη καὶ ποῖα οὐ, ἀλλὰ τοῦ συνειλημμένου; A. remarks (1036 a 31 sqq.) that, when the form of a circle is realised in heterogeneous material, as brass, wood and stone, it is clear that none of these materials can be parts of the οὐσία of circle, because it is found separated from them. Even where this is not so, that is, where the form is not presented in different materials, the case may still be the same as it would be if all the circles ever seen were of brass, though under those conditions the act of mental abstraction would be rendered difficult. His illustration has a direct bearing on the passage before us: (1036 b 3) οἷον τὸ τοῦ ἀνθρώπου εἶδος αἰεὶ ἐν σαρκὶ φαίνεται καὶ ὅσοις καὶ τοῖς τοιούτοις μέρεσιν· ἄρ' οὖν καὶ ἐστὶ ταῦτα μέρη τοῦ εἶδους καὶ τοῦ λόγου; ἢ οὐ, ἀλλ' ὕλη, ἀλλὰ διὰ τὸ μὴ καὶ ἐπ' ἄλλων ἐπιγίγνεσθαι ἀδυνατοῦμεν χωρίσαι. ἐπεὶ δὲ τοῦτο δοκεῖ μὲν ἐνδέχεσθαι, ἄδελον δὲ πότε, ἀποροῦσί τινες ἥδη κατέ. The doubt how much is form and how much is matter may be extended to circle and triangle; hence some, i.e. Platonists, would reduce all sensible existence to numbers, an hypothesis which A. explains at some length, criticises and finally rejects 1036 b 8—23. He emphatically reiterates his doctrine of material forms: ἔνια γὰρ ἴσως τὸδ' ἐν τῷ εἶναι, ἢ ὡδὶ ταδὶ ἔχοντα. Then, evidently reverting to the illustration with which he started, he rejects unequivocally the supposition that man or animal is analogous to the circle and separable from the material, i.e. corporeal, parts which we know. The cases are not parallel: αἰσθητὸν γὰρ τι τὸ ζῶν καὶ ἀνευ κινήσεως οὐκ ἔστιν ὀρίσασθαι, διὸ οὐδ' ἀνευ τῶν μερῶν ἐχόντων πως κατέ. If the conclusion of *Μεταφ. Ζ.*, c. 11 represents A.'s mature judgment, it may be plausibly argued that in our present passage ἔτι δὲ ἄδελον is a mere phrase of the lecture-room, like σκεπτέον ὕστερον, an affectation of uncertainty because the writer is stimulating, without satisfying, curiosity. Cf. *Μεταφ. Ζ.* 1026 a 8 ἀλλ' εἰ ἀκινήτων καὶ χωριστῶν ἐστὶ [int. θεωρητικὴ ἢ μαθηματικὴ], νῦν ἄδελον: A.'s own opinion on the point is abundantly clear from other parts of the *Metaphysics*, as well as from the partial pronouncement 6 lines lower down (1026 a 14 sq.), where the text is not above suspicion. Alex. Aphr. *De An.* 15, 9 sqq. refuses to allow the analogy between the soul and the pilot, unless we substitute ἡ τέχνη ἢ κυβερνητικὴ for the pilot himself. In that case alone (15, 11) εἴη ἂν ὡς ἔξισ τις καὶ εἶδος ἐν ὕλῃ ἢ ψυχὴ ἐν τῷ σώματι (οὕτως γὰρ αἱ ἔξεις εἰσὶν ἐν τοῖς ὄν εἰσὶν ἔξεις· ἀσώματοι τε γὰρ εἰσι καὶ ἀχώριστοι τῶν ἐν οἷς εἰσὶν). On the other hand, if we take it of the pilot himself, he says, the soul will be made corporeal (σῶμα) and will be located in a distinct part of the body, so that the whole body will not possess soul or consciousness: and generally he urges the objections which A. himself brings against his predecessors in *De A. I.*, c. 3. Thus Alex. preserves consistency and even interprets ἄδελον εἰ by οὐχ οἷον τε; but some considerations may be admitted on the other side. The language of 1036 b 7 is cautious: A. does not there commit himself either way on the general question. Remnants of Platonism turn up oddly elsewhere in A. and, when Alex. substitutes ἡ κυβερνητικὴ for ὁ κυβερνήτης, we are forcibly reminded of *Μεταφ. Ζ.* 1075 a 11—15, where A. gives the preference to the arranger and not to the arrangement. In this treatise the problem of the origin of life does not concern us and after 408 b 18, 413 b 25—27 A. makes no dogmatic statement as to whether soul or any part of it is an immaterial entity. See 431 b 17—20. As to the illustration, it

is quite idle to minimise its meaning. If, as some think, comparing *Phys.* VIII. 4, 254 b 30, it only means that, as the sailor steers the ship, so the soul rules, controls and moves the body, A. would not have said *ἄδελον*, see 407 b 18. The perplexity of the Greek commentators may be inferred from the divergence of their views. Them. (43, 28 sqq. H., 80, 5 sqq. Sp.) refers the whole question to *νοῦς χωριστός*, as if *ἡ ψυχὴ* stood for *ἡ νοητικὴ*, and as if this could be *σώματός τινος ἐντελέχεια*, but *χωριστή*. Simpl. (96, 8 sqq.) gives an explanation which would have better suited the *ἐνία γε* of a 6. He of course has no patience with *ἄδελον*, but for the opposite reason to Alex. Aphr.; (96, 10) *διὰ τί οὖν ἄδελον ἐπεὶ εἶπεν, εἰ καὶ πλάσαι χαλεπὸν; καὶ γὰρ ἐναργῶς ἡ θεωρητικὴ οὐδὲ ὥς ὄργανον χρῆται*. Philop. (224, 12 sqq.) proposes various explanations mutually inconsistent and does not omit to criticise Alex.

## CHAPTER II.

This chapter is mainly devoted to a fresh discussion, elucidation and justification of the definition of soul contained in c. 1. By way of introduction, a few logical remarks are prefixed on the value of definitions in general.

413 a 11. *ἀσαφῶν μὲν φανερωτέρων δὲ*. Concrete objects, which are here meant, are less distinct to thought than universals, but are more obvious, being earlier observed and more familiar to us. The former are *αἰσθητά*, while general notions or concepts (which according to A. are formed by the mind from them) are *νοητά*. The former are particulars, or individual things (*καθ' ἑκάστα*), while the latter are universals (*καθόλου*). Not only are concrete objects 'indistinct' (*ἀσαφῆ*), but also 'confused' (*συγκεχυμένα*): a fact which all subsequent psychologists have emphasised following Plato, *Rep.* 523 E sqq. The meaning would have been clearer if *φύσει* or *κατὰ τὸν λόγον* had been added to *ἀσαφῶν* and *ἡμῖν* to *φανερωτέρων*.

a 12. *τὸ σαφές*. The superior clearness (*σαφήνεια*) of mental concepts is emphasised in Plato, *Rep.* 523 B sqq. *κατὰ τὸν λόγον*. What is better known by reason or reasoning is frequently opposed to what is known by sense (*κατὰ τὴν αἴσθησιν*), as theory is to facts. Cf. *Pol.* 1328 a 20 *διὰ τῶν λόγων* ( *διὰ τῆς αἰσθήσεως*; *de Part. An.* II. 8, 653 b 22, 30. *γνωριμώτερον*, int. *ἀπλῶς* or *τῇ φύσει*. In *Eth. Nic.* 1095 b 2, the distinction is very clearly marked between what is better known to us (*ἡμῖν*), and what is better known absolutely (*ἀπλῶς*); *ἀρκτέον μὲν γὰρ ἀπὸ τῶν γνωρίμων, ταῦτα δὲ διττῶς· τὰ μὲν γὰρ ἡμῖν τὰ δ' ἀπλῶς*. Both there and here A. is discussing method: where are we to start in beginning the study of ethics, psychology or any similar subject? Universals are combined and confused together in the complex object of sense. A.'s theory of learning amounts to this, that we start with the 'data' of sense, indistinct and confused, when tested by the standard of thought (*τῇ λόγῳ*) and disentangle from their complexity what is more knowable in the order of nature. By induction and abstraction we thus arrive at concepts, principles and causes which are more truly objects of knowledge. Cf. Zeller, *Aristotle*, I. 204—209 Eng. Tr.; Grote, pp. 196, 239, 332, 2nd edition (vol. I. 282, 344, II., 5 1st edition). The process is described by A. in many passages: *Anal. Post.* I. 2, 71 b 33 sqq., *Tor.* VI. 4, 141 b 3 sqq., *Meta.* 1029 b 4 *ἡ γὰρ μάθησις οὕτω γίγνεται πᾶσι διὰ τῶν ἡττον γνωρίμων φύσει εἰς τὰ γνώριμα μᾶλλον*, and b 7 (where *αὐτῷ γνωριμώτερον* stands opposed to *τὰ τῇ φύσει γνώριμα*). A. continues (1029 b 8) *τὰ δ' ἐκάστοις γνώριμα καὶ πρῶτα πολλάκις ἡρέμα ἐστὶ γνώριμα, καὶ μικρὸν ἢ οὐδὲν ἔχει*

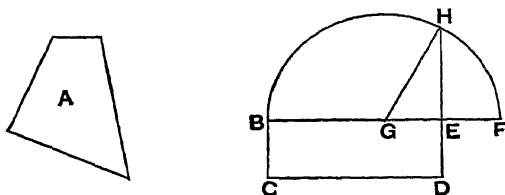
τοῦ ὄντος. ἀλλ' ὁμως ἐκ τῶν φαύλως μὲν γνωστῶν, αὐτῷ δὲ γνωστῶν, τὰ ἄλως γνωστὰ γινῶναι πειρατέον, μεταβαίνοντας διὰ τούτων αὐτῶν. Inadequate as are the data of experience, we start with them and use them as stepping-stones to higher knowledge.

a 13. πάλιν. The characteristic of the reasoning which follows is, as Simplicius points out, that it argues from effects to causes, and revises the definition by investigating the different types of soul with which experience has made us familiar. Of these there was no mention in II., c. I, 412 a 6—b 9. τὸ ὅτι. The fact that *B* is *C* as opposed to τὸ διότι, the reason why it is so, the cause or condition upon which the fact depends. These convenient abbreviations *A.* explains by *πρᾶγμα* in the one case and *αἰτία* in the other.

a 14. τὸν ὀριστικὸν λόγον, "the statement in which a definition is set forth," not materially different from *ὅρος* or *ὀρισμός*: cf. *Anal. Post.* II. 10, 93 b 29 sqq. Besides verbal definitions, which serve merely to explain the meaning of a name, *A.* recognises two classes of real definitions, clearing up the nature or what (τί ἐστίν) of the thing defined. In the first the object is to set forth (δηλοῦν, δεικνύναι) what the thing really is, its essence, not its accidental qualities; such are Euclid's definitions, each of them is ἀναπόδεικτος, σημαίνει μὲν, δείκνυσσι δ' οὐ. The second class, besides such a statement, also contains a reference to the cause or essential condition. Cf. *Anal. Post.* II. 10, 93 b 38—94 a 13, where the example chosen is thunder (βροντή), of which the definition ψόφος ἐν νέφεσιν belongs to the first class, and the definition ψόφος ἀποσβεννυμένου πυρός ἐν νέφεσιν to the second class. Similarly στέρησις φωτός defines an eclipse, but the complete definition would add the cause, viz. the interposition, ὑπὸ γῆς ἐν μέσῳ γιγνομένης, *Μεταφῆ.* 1044 b 14 sq. Thus, according to *A.*, τι κατὰ τίνος σημαίνει ὁ λόγος ὁ ὀριστικός, καὶ δεῖ τὸ μὲν ὥσπερ ὄλην εἶναι, τὸ δὲ ὡς μορφὴν, *Μεταφῆ.* 1043 b 30—32.

a 16. συμπεράσμαθ', "conclusions of syllogisms," συμπεραίνειν, like "rationem concludere," meaning to draw an inference from premisses and so round off or finish the argumentation: cf. 407 a 27. Each fresh physical discovery is ultimately embodied in a definition, e.g. gravitation.

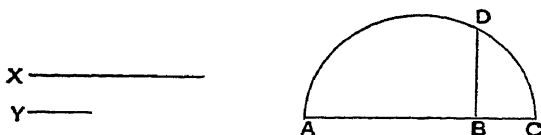
a 17. ὁ τετραγωνισμός. See Wallace, p. 230. To understand the illustration we must refer to Euclid II. 14 and VI. 13. Euclid in II. 14 proposes to describe a square that shall be equal to a given rectilinear figure (*A*), and after constructing the rectangle *BCDE* which is equal to *A*, finds that if we produce *BE* to *F* and make *EF=ED*, bisect *BF* at *G* and produce *DE* to a point *H* on the circumference of a circle drawn from *G* with radius *GB*, the square of *EH* is equal to *BCDE*, and so to *A*.



The problem in VI. 13 is to find a mean proportional between two straight lines; and we find that by placing the two lines in one straight line *AC*, describing a semicircle on the whole line as diameter, and from the point *B* where the two lines meet drawing a line at right angles to *D* a point on the circum-



ference, a mean proportional, i.e. a line which stands to the one line in the same ratio as it itself stands to the other, is obtained; so that  $AB:BD::BD:BC$ .



It will be observed that  $BD$ , which is the mean proportional between  $AB$  and  $BC$ , is also the side of the square equal to the rectangle  $AB \cdot BC$ . Cf. *Μεταφρ.* 996 b 18  $\epsilon\tau\iota \delta\epsilon \kappa\alpha\iota \acute{\epsilon}\nu \tau\omicron\iota\varsigma \acute{\alpha}\lambda\lambda\omicron\iota\varsigma \tau\omicron \epsilon\iota\delta\acute{\epsilon}\nu\alpha\iota \acute{\epsilon}\kappa\alpha\sigma\tau\omicron\nu, \kappa\alpha\iota \acute{\omicron}\nu \acute{\alpha}\pi\omicron\delta\epsilon\iota\chi\epsilon\iota\varsigma \epsilon\iota\sigma\iota, \tau\omicron\tau' \omicron\lambda\omicron\mu\epsilon\theta\alpha \upsilon\pi\acute{\alpha}\rho\chi\epsilon\iota\nu, \acute{\omicron}\tau\alpha\nu \epsilon\iota\delta\acute{\omega}\mu\epsilon\nu \tau\acute{\iota} \acute{\epsilon}\sigma\tau\omega, \omicron\lambda\omicron\nu \tau\acute{\iota} \acute{\epsilon}\sigma\tau\iota \tau\omicron \tau\epsilon\tau\tau\alpha\gamma\omega\nu\acute{\iota}\zeta\epsilon\iota\nu, \acute{\omicron}\tau\iota \mu\acute{\epsilon}\sigma\tau\eta\varsigma \epsilon\upsilon\pi\epsilon\omicron\sigma\iota\varsigma.$

**413 a 20—b 13.** Life, in some one of its manifestations, distinguishes that which has soul from that which is inanimate [§ 2]. The lowest form of life is best seen in plants, which have no other form. It implies nutrition and growth, and may be termed the nutritive principle [§ 3]. It is found by itself in plants, but is implied wherever, in mortal things, there are higher forms of life. Next comes sensation, the distinguishing characteristic of all animals, some of which are as stationary as plants [§ 4]. Of the various senses, touch alone is common to all animals, and, though found separate in some animals, is implied whenever other senses are present, just as the nutritive principle, which exists separately in plants, is conjoined with all higher forms of life [§ 5]. To these two functions, nutrition and sensation, may be added motion and understanding (*διάνοια*) [§ 6].

**a 21.**  $\tau\acute{\omega} \zeta\eta\nu$ . Cf. 412 a 13  $\tau\acute{\omega}\nu \delta\epsilon \phi\upsilon\sigma\iota\kappa\acute{\omega}\nu \tau\acute{\alpha} \mu\acute{\epsilon}\nu \acute{\epsilon}\chi\epsilon\iota \zeta\omega\eta\nu, \tau\acute{\alpha} \delta' \omicron\upsilon\kappa \acute{\epsilon}\chi\epsilon\iota \zeta\omega\eta\nu \delta\epsilon \lambda\acute{\epsilon}\gamma\omicron\mu\epsilon\nu \tau\eta\nu \delta\iota' \alpha\upsilon\tau\omicron\upsilon \tau\rho\omicron\phi\eta\nu \tau\epsilon \kappa\alpha\iota \alpha\upsilon\acute{\xi}\eta\sigma\iota\nu \kappa\alpha\iota \phi\theta\acute{\iota}\sigma\iota\nu.$

**a 22.**  $\pi\lambda\epsilon\omicron\nu\alpha\chi\acute{\omega}\varsigma \delta\acute{\epsilon}$ . We notice that the various meanings which the term 'life' bears have reference to the common characteristic by which that term was defined in II., c. I (see preceding *note*), and this is admitted here in the words  $\kappa\acute{\alpha}\nu \acute{\epsilon}\nu \tau\iota \tau\omicron\upsilon\tau\omega\nu \acute{\epsilon}\nu\upsilon\pi\acute{\alpha}\rho\chi\eta \mu\acute{\omicron}\nu\omicron\nu$ , as soon as the relation between the terms of this series of functions is properly understood. At the same time, it is A.'s great merit as a psychologist to have enlarged the conception of vitality and vital principle and to have brought these different functions into connexion for comparative study. Cf. *Εἰθ. Νίε.* 1170 a 16—20  $\tau\omicron \delta\acute{\epsilon} \zeta\eta\nu \acute{\omicron}\rho\acute{\iota}\zeta\omicron\nu\tau\alpha\iota \tau\omicron\iota\varsigma \zeta\acute{\phi}\omicron\iota\varsigma \delta\upsilon\nu\acute{\alpha}\mu\epsilon\iota \alpha\iota\sigma\theta\acute{\eta}\sigma\epsilon\omega\varsigma, \acute{\alpha}\nu\theta\rho\omega\pi\omicron\iota\varsigma \delta' \alpha\iota\sigma\theta\acute{\eta}\sigma\epsilon\omega\varsigma \acute{\eta} \nu\omicron\theta\acute{\eta}\sigma\epsilon\omega\varsigma \cdot \acute{\eta} \delta\acute{\epsilon} \delta\upsilon\nu\acute{\alpha}\mu\iota\varsigma \epsilon\iota\varsigma \tau\eta\nu \acute{\epsilon}\n\epsilon\rho\gamma\epsilon\iota\alpha\nu \acute{\alpha}\nu\acute{\alpha}\gamma\epsilon\tau\alpha\iota, \tau\omicron \delta\acute{\epsilon} \kappa\upsilon\rho\iota\omicron\nu \acute{\epsilon}\n \tau\eta \acute{\epsilon}\n\epsilon\rho\gamma\epsilon\iota\acute{\alpha} \cdot \acute{\epsilon}\omicron\iota\kappa\epsilon \delta\eta \tau\omicron \zeta\eta\nu \acute{\epsilon}\iota\nu\alpha\iota \kappa\upsilon\rho\acute{\iota}\omega\varsigma \tau\omicron \alpha\iota\sigma\theta\acute{\alpha}\n\epsilon\sigma\theta\alpha\iota \acute{\eta} \nu\omicron\epsilon\acute{\iota}\nu. \tau\omicron \delta\acute{\epsilon} \zeta\eta\nu \tau\acute{\omega}\nu \kappa\alpha\theta' \alpha\upsilon\tau\omicron \acute{\alpha}\gamma\alpha\theta\acute{\omega}\nu \kappa\alpha\iota \acute{\eta}\delta\acute{\epsilon}\omega\nu, \text{ and } 1149 a 9 \kappa\alpha\iota \tau\acute{\omega}\nu \acute{\alpha}\phi\rho\acute{\eta}\nu\omega\nu \omicron\acute{\iota} \mu\acute{\epsilon}\n \acute{\epsilon}\kappa \phi\upsilon\sigma\epsilon\omega\varsigma \acute{\alpha}\lambda\omicron\gamma\iota\sigma\tau\omicron\iota \kappa\alpha\iota \mu\acute{\omicron}\nu\omicron\nu \tau\eta \alpha\iota\sigma\theta\acute{\eta}\sigma\epsilon\iota \zeta\omega\acute{\nu}\tau\epsilon\varsigma \theta\eta\rho\iota\omega\delta\epsilon\iota\varsigma, \acute{\omicron}\sigma\pi\epsilon\rho \acute{\epsilon}\nu\iota\alpha \gamma\acute{\epsilon}\n\eta \tau\acute{\omega}\nu \pi\acute{\omicron}\rho\rho\omega \beta\alpha\rho\beta\acute{\alpha}\rho\omega\nu.  $\acute{\epsilon}\n \tau\iota$ . That is, life in a single one of these significations, namely the principle of nutrition and growth; not one or other, which would be  $\acute{\epsilon}\n \gamma\acute{\epsilon} \tau\iota$ . When A. says  $\acute{\epsilon}\n \tau\iota$ , he is anticipating, e.g., 413 b 33.$

**a 23**  $\omicron\lambda\omicron\nu \nu\omicron\upsilon\varsigma, \alpha\iota\sigma\theta\eta\sigma\iota\varsigma \dots 24 \acute{\epsilon}\tau\iota \dots 25 \alpha\upsilon\acute{\xi}\eta\sigma\iota\varsigma$ . It is confusing to have  $\acute{\epsilon}\n \tau\iota \tau\omicron\upsilon\tau\omega\nu$  replaced by a list of four or five powers, when  $\zeta\eta\nu$  is employed in but one particular sense, viz. the last. It is best, then, to take the words, though grammatically nominatives to  $\acute{\epsilon}\nu\upsilon\pi\acute{\alpha}\rho\chi\eta$ , as simply an interpretation of  $\pi\lambda\epsilon\omicron\nu\alpha\chi\acute{\omega}\varsigma \delta\acute{\epsilon} \tau\omicron\upsilon \zeta\eta\nu \lambda\epsilon\gamma\omicron\mu\acute{\epsilon}\nu\omicron\nu$ , for the  $\acute{\epsilon}\n \tau\iota$  represents nothing but nutrition and growth, since (a 31 sq.) nutrition goes with all the other vital functions and none of them can be singly present without it. Later on (414 a 4, 12) A. is more careful to distinguish life in this restricted sense from sensation and thought.

a 25. διὸ καὶ τὰ φύόμενα. That a plant lives and "has a soul" is consistently maintained by A.; cf. *De Gen. An.* II. 3, 736 b 13 and especially *De Part. An.* IV. 5, 681 a 12 ἡ γὰρ φύσις μεταβαίνει συνεχῶς ἀπὸ τῶν ἀψύχων εἰς τὰ ζῆα διὰ τῶν ζώντων μὲν οὐκ ὄντων δὲ ζῶντων (i.e. plants).

a 26. δύναμιν καὶ ἀρχήν. Cf. 412 a 14. What is there called τὴν δι' αὐτοῦ τροφήν τε καὶ αὔξησιν καὶ φθίσιν, A. here calls a capacity or origin of growth and decay. With ἀρχή in the sense of originating cause cf. 402 a 6, 412 b 17, 415 b 8 sqq., αἰτία καὶ ἀρχή.

a 28. κατὰ τοὺς ἐναντίους τόπους, "in opposite directions," *in contrarias partes*. This incidental addition serves to introduce the parenthetical note of the following sentence.

a 29 πάντῃ, ὅσα...30 τέλους. The text is uncertain. πάντοσε, ut Bekkerus restituit, nec vero πάντῃ ὅσα: neque enim scriptor plantis relictis ad cetera animantia vagatur (Trend.). But πάντοσε is found in only one inferior manuscript and *Ind. Ar.* cites no other instance of the word in A. But, if we waive the objection to πάντοσε, Bekker should at least have placed a stop after the word; his text as it stands requires us to take καὶ τρέφεται καὶ ζῆ with ἐπ' ἄμφω καὶ πάντοσε, which strains the meaning of τρέφεται and makes it very little different from αὔξεται. Torst., who saw this and placed a colon after πάντοσε, insisted on the retention of τε: non potest omitti. A. hoc dicit: nutritur et propterea quod nutritur vivit. Biehl, however, who restores ὅσα from E, places the stop after τρέφεται and is thus compelled to omit τε. As none of these proposals is very convincing, I am content to reproduce the text of E, placing a comma after πάντῃ. It gives a clear sense, ὅσα being of course restricted to plants, pace Trendelenburgii, and the tautology of αἰεὶ...διὰ τέλους, τρέφεται...ἕως ἄν δύνηται λαμβάνειν τροφήν cannot be altogether removed by any change. I cannot see that Biehl's text is any improvement upon the reading of cod. W, which also omits τε, provided we punctuate after τρέφεται thus: ὅσα αἰεὶ τρέφεται, καὶ ζῆ κτέ. The cardinal point to bear in mind is that, according to A., growth depends upon nutrition, and nutrition implies life (415 b 26—28, 416 b 9). So, with his habitual caution, after telling us plants grow in all directions, he adds the necessary qualification "provided they are constantly nourished and therefore kept alive." It would be possible to take the last clause ἕως ἄν κτέ. with ἐπ' ἄμφω καὶ πάντῃ [int. αὔξεται] instead of with ζῆ, but that would not mend matters much. Cf. 404 a 15 ζῆν δὲ ἕως ἄν δύνωνται τοῦτο ποιεῖν, 416 b 14, 434 a 23 sqq., *De Part. An.* II. 10, 655 b 31 οὔτε γὰρ εἶναι οὔτε αὔξανεσθαι ἐνδέχεται ἄνευ τροφῆς.

a 31. τοῦτο μὲν τῶν ἄλλων δυνατόν, τὰ δ' ἄλλα τούτου ἀδύνατον. Here the δὲ is concessive, clearly so because φανερόν is related only to the clause with μὲν, the possibility of separation. Ordinarily it is the μὲν clause which is concessive.

a 32. ἐν τοῖς θνητοῖς, "in living things which are perishable, as being subject to death, and so to generation and destruction." This is the proper sphere of physics and therefore of this treatise. Outside this sphere A. recognised (1) οὐσίαι αἰσθηταὶ αἰδίοι, τὰ αἰδία τῶν αἰσθητῶν and (2) οὐσία ἀκίνητος. The former include the heavenly bodies, sun and stars, the latter is the deity. See for the divisions *Metaph.* 1069 a 30—33, 1071 b 3—5; for a possible reference to the eternal things of sense, *De A.* 434 b 4 sq. They are undoubtedly referred to *Metaph.* 991 a 10, 1050 b 16—29, 1069 b 25.

413 b 1. τοῖς ζῶσι, i.e. in plants which live no less than animals. For τοῖς ζῶσι, not τοῖς ζῴσι, cf. 413 b 4 ζῶα λέγομεν καὶ οὐ ζῆν μόνον and *De Part. An.* IV. 5, 681 a 13 τῶν ζώντων μὲν οὐκ ὄντων δὲ ζῶντων.

b 2. διὰ τὴν αἰσθησιν: cf. *De Gen. An.* II. 2, 736 a 29 περὶ ψυχῆς καθ' ἣν λέγεται ζῶον (ζῶον δ' ἐστὶ κατὰ τὸ μῦρον τῆς ψυχῆς τὸ αἰσθητικόν). πρώτως, "primarily," or "fundamentally"; the adverb used in the same sense as the adjective in the definition of soul as ἐντελέχεια ἡ πρώτη σώματος (412 a 27). τὰ μὴ κινούμενα. See note on 410 b 19 μόνιμα.

b 4. αἰσθήσεως is the whole, of which ἀφή is a part.

b 5. ἀφή. This is repeated below, 414 b 3. Cf. 434 b 9—11, 13, 23 sq., 435 a 12 sq., 435 b 5—7, 16 sq., *De Sensu* I, 436 b 13, *Hist. An.* I. 3, 489 a 17 πᾶσι δὲ τοῖς ζῴοις αἰσθησις μία ὑπάρχει κοινὴ μόνη ἡ ἀφή.

b 6. οὕτως. Another fact which confirms the ascending scale of psychical functions. Plants grow and live without sensation. The lowest animals, or zoophytes, have one sense only, namely touch.

b 7. μῦρον. This word is used prematurely and carelessly, for below (b 13—16) the question whether there be parts of the soul is expressly reserved: cf. 413 a 5 εἰ μεριστὴ πέφυκεν. In fact the whole sentence is of the nature of a footnote explaining the technical term τὸ θρεπτικόν as the nutritive "part" or principle of soul, elsewhere often called τὸ φυτικόν καὶ αὐξητικόν.

b 10. ὕστερον ἐροῦμεν. The reason, which is teleological, will be found in III., c. 12, especially 434 b 10 sqq. The sense of touch is necessary if the animal is to maintain itself, for body is in every case tangible, and the animal, as σῶμα ἐμψυχον, comes in contact with other bodies, and if it had not the sense of touch, it would not be able to avoid some of these corporeal things and take others. See also the comparison between the means of defence possessed by man and the brutes and the superior utility of the human hand, *De Part. An.* IV. 10, 687 a 5 sqq.

b 11. ἐπὶ τοσούτον εἰρήσθω, "let this much suffice." We here repeat the substance of 413 a 20—b 10. τῶν εἰρημένων τούτων, "the functions here mentioned."

b 12. τούτοις ὄρισται κτέ. Note the omission of "appetency," ὀρεκτικόν, and the vagueness of "understanding," διανοητικόν. A. speaks in detail of all the functions which discriminate the animate from the inanimate. He will take the several senses, give some speculation as to the way in which each operates and some remarks on the central sense in which all converge. Note how completely this accords with the scheme outlined in Book I., c. 1, especially 402 a 7 sqq., b 1 sqq., b 9 sqq., and b 21 sqq.

b 12. θρεπτικῷ, αἰσθητικῷ, διανοητικῷ, κινήσει. Two of these four, motion and sensation, were recognised by all A.'s predecessors; see 403 b 24—31. He adds two others, nutrition and understanding. His first business in this treatise is to enlarge the limited view of psychology taken by his predecessors.

**413 b 13—414 a 3.** It may be asked whether each of these four faculties is a soul or a part of soul, and whether, if a part, it can exist separately, or is only separable in thought. With respect to some of these faculties the question is easy to settle [§ 7]. Not only can plants live when divided, but certain worms continue to feel after being cut in pieces. Sensation in the severed parts implies pleasure or pain. These in turn imply appetite and so desire of a sort. Whence it is easy to infer the union of these several faculties in the soul of each segment [§ 8]. If any part or faculty of soul is separable, it can only be the intellect: the question will come up again hereafter [§ 9]. While we deny that the other faculties can have separate existence, we at the same time fully maintain that each of them is logically distinct and separable in thought, the power of opining being as distinct from sensitivity as opinion is from sensation [§ 10]. Some animals possess but one of such faculties, some

more, and others all of them, just as within the sphere of sense-perception some animals have but one sense, others more than one, others all the senses [§ 11].

b 13 *πότερον...15 τόπω*. This resumes the old problem of 402 b 1 *σκεπτέον* δὲ καὶ εἰ μεριστὴ ἢ ἀμερής, cf. 411 a 26—b 3. It should be observed that only material things can be spatially separate, except of course *κατὰ συμβεβηκός*: cf. 406 a 4—16, 407 a 2, 7—9. What is here expressed by *τόπω* might be expressed by *κατὰ μέγεθος*, cf. 429 a 11 *εἴτε καὶ μὴ χωριστοῦ κατὰ μέγεθος ἀλλὰ κατὰ λόγον*: also 433 b 25 *μεγέθει δ' ἀχώριστα*, 432 a 20 *χωριστὸν ἢ μεγέθει ἢ λόγῳ*.

b 16 *ἐπὶ τῶν φυτῶν...19 πλειόνων*, "in the case of plants, some," i.e. such as are propagated by cutting. After the division the parent plant and cutting continue to live separated from one another. We should expect *ἐνια* to mean "some plants," but *ἀπ' ἀλλήλων* shows that it means "some parts of plants." The judicious Themistius omits *ἐνια* from his paraphrase. The use of *διαιρούμενα* shows that, when the sentence began, A. was thinking of the undivided plants, but from *χωριζόμενα ἀπ' ἀλλήλων* it is equally clear that the subject of the sentence has changed and has become "the slips" or parts of the now divided plants. See *notes* on 411 b 19, 25—27.

b 19. *ἑτέρας διαφορὰς*, "other characteristics," viz. the differences which determine the varieties of soul, the sensitive, locomotive, nutritive. As these are not strictly species of a genus, the word must not be taken in the strict technical sense of *differentiae*.

b 20. *ἐν τοῖς διατεμνομένοις*, in the resulting segments: that is, divide these "insects" (see *note* on 411 b 20 *ἐνια τῶν ἐντόμων*) and the portions are able to go on performing certain vital functions. Such creatures as earthworms have vitality in compartments, as well as in the whole.

b 22. *εἰ δ' αἰσθῆσιν, καὶ φαντασίαν καὶ ὄρεσιν*. If we leave the comma after *αἰσθῆσιν*, imagination in the technical sense (see on 403 a 8) would be attributed to all animals which possess sensation. It appears, however, from 415 a 10 sq. *τοῖς μὲν οὐδὲ φαντασία* that not all animals have *φαντασία*. Freudenthal would therefore bracket *καὶ φαντασίαν*. Professor H. Jackson proposes to secure the same end by a change of punctuation, removing the comma after *αἰσθῆσιν* and placing it after *φαντασίαν*. This gets rid of inconsistency for the present, but, as we shall see, A. is not at all clear whether all the lower animals have something analogous to imagination in man, or what such a faculty is like in the lowest forms of life. See on 428 a 10 sq., 429 a 4—8, 433 b 31—434 a 5, 433 a 9—12.

b 25. *οὐδὲν πω*. We are in fact no nearer a decision of the problem raised in 403 a 3—16. In 408 b 18—29 A. gave unmistakable hints that *νοῦς* is to be regarded as a separate entity, which is the view actually expounded of the one part of *νοῦς* in III., cc. 4—8 (q.v.). In the present passage we have again a mere saving clause or guarded statement which does not commit us. Cf. 413 a 8 *εἴτε δὲ δῶλον εἰ κτέ.* and *note*.

b 25. *ἀλλ' ἔοικε ψυχῆς γένος ἕτερον εἶναι*. Most editors take *ψυχῆς* as partitive genitive, e.g. Wallace translates: "Reason however would seem to constitute a different phase of soul from those we have already noticed." It would be grammatically possible to join *ψυχῆς* with *ἕτερον*, "it would seem, however, that intellect is something different from soul." If *νοῦς* and *ψυχή* were *ἕτερα τῷ γένει*, the former might be described as *ἕτερον γένος*. We should thus avoid making *νοῦς* a kind of *ψυχή*. But, considering the numerous passages in which *νοῦς* and *νοεῖν* are treated as functions of soul and the use of *ἡ νοητικὴ* [int. *ψυχῇ*] 429 a 28, I shrink from this expedient, even though it might remove some superficial difficulties. The fact is that, as pointed out by Zeller and others, the

position of νοῦς in the system is anomalous. What is here said of νοῦς agrees exactly with the substance of 408 b 18—29, of which passage it is a neat summary.

b 28. καθάπερ τινές φασιν. The Platonic view is intended. Cf. *notes* on 411 b 5. In the *Timaeus* 69 D sqq. not only does Plato divide the soul, but he actually assigns the different parts to different parts of the body.

b 29. τῷ δὲ λόγῳ ὅτι ἕτερα, φανερόν. This was the alternative to spatial or local distinctness set forth in 413 b 14 ὥστ' εἶναι χωριστὸν λόγῳ μόνον ἢ καὶ τόπῳ, where see *note*. For the local distinctness which A. ascribes to Plato's three souls he substitutes a logical distinction between the several faculties. αἰσθητικῷ γὰρ εἶναι, "sensitivity in the abstract." Cf. *supra* 412 b 13 τὸ πελέκει εἶναι. The absence of the article is rare. Cf. 416 b 12 τροφῇ καὶ αὐξητικῷ εἶναι. In 429 b 11 ὕδατι εἶναι and *Metaφh.* 1001 a 12 τοῦ ἐνὶ εἶναι καὶ ὄντι the article can easily be supplied from what precedes.

b 30. δοξαστικῷ, int. εἶναι. This seems to be a subdivision of the thinking faculty (διανοητικόν), δοξάζειν being enumerated among psychical functions in 411 a 26 sq.

b 32. τῶν ζώων. If we compare the parallel passage 414 a 29—b 1 we notice that these words are absent. To omit them here would remove an obvious inconsistency. For, if they are to be taken, not only with b 32 ἐνίοις, but also with b 33 τισὶ and ἑτέροις, A. is committed to the statement that there are animals with only one power or faculty of soul, which cannot be true in view of 414 a 32—b 1. Essen, accordingly, would read ζώωντων for ζώων. But it is quite possible that A. did use this incorrect expression, and Them. seems tacitly to correct the blunder: 46, 5 H., 84, 19 Sp. τῇ μὲν οὖν πρώτῃ διαφορᾷ τὰ ζῶα ταύτῃ διήνεγκεν, ὅτι τοῖς μὲν ἀπασαι τῆς ψυχῆς ὑπάρχουσιν αἱ εἰρημέναι δυνάμεις, τοῖς δὲ πλείους, τοῖς δὲ ἐλάττους, τοῖς δὲ καὶ μία μόνη, ἅπερ οὐ ζῶα φάμεν, ἀλλὰ ζῶντα.

b 33. ποιήσει. M. Rodier reads ποιεῖ, a fact which ought to have been recorded in the critical *notes*.

414 a 1. διαφορὰν τῶν ζώων. The gradations of soul will serve as a basis for a classification of animals. The inferior manuscript P reads τῶν ζώωντων here. M. Rodier, who meets the difficulty mentioned in *note* on b 32 *supra* by restricting b 32 ταῦτα, b 33 τούτων, quite arbitrarily, to the faculties of soul which animals possess other than the nutritive, understands b 33 ἐν μόνον, τοῦτο to be τὸ αἰσθητικόν and so gives a different interpretation of the clause, viz. that sensation differentiates the animal from the plant: "qui différencie l'animal, c'est-à-dire qui constitue la différence spécifique de l'animal par rapport au vivant." ὕστερον, viz. III., cc. 12 and 13. The teleological explanation there sketched in outline is given with greater fulness of detail in the treatise *De Part. An.*, cf. IV. 10, 687 a 2 δι' ἣν μὲν οὖν αἰτίαν τὰ μὲν δίποδα τὰ δὲ πολύποδα τὰ δ' ἄποδα τῶν ζώων ἐστί, καὶ διὰ τίν' αἰτίαν τὰ μὲν φυτὰ τὰ δὲ ζῶα γέγονεν, εἰρηται.

a 3. τὰ δὲ τινάς, e.g. bees, which, according to A., have no sense of hearing cf. *Metaφh.* 980 b 22 φρόνιμα μὲν ἄνευ τοῦ μανθάνειν, ὅσα μὴ δύναται τῶν ψόφῳ ἀκούειν, οἷον μέλιττα.

414 a 4—19. The starting point of the present enquiry, 413 a 20 sqq., is that the animate is differentiated from the inanimate by living. Hence soul stands for that by which we live and perform the various vital functions, e.g. have sensation. But A. proceeds: such a phrase as "that by which we live and have sensation" bears two meanings, as we see from the similar phrases, "that by which we know" and "that by which we are healthy,"

which may denote either (1) the form, knowledge or health, or (2) that which is receptive of form, in the one case "the soul" regarded as capable of knowledge, in the other, viz. the case of health, some part of the body or even the whole by which we are healthy. Now it is as form and not as recipient or substratum that soul is said to be "that whereby we live, perceive and think" [§ 12]. Hence soul is the form and therefore the entelechy of a species of body [viz. a natural body provided with organs], not body the entelechy of soul [§ 13].

a 4 ἐπεὶ δὲ...14 ὑποκείμενον. The best view as to the construction of this sentence is that of Bonitz, *Arist. Stud.*, II. 120 sqq. According to him, ἐπεὶ introduces the first of three premisses, constituting the protasis; the apodosis begins at a 13 ὥστε λόγος. Some have made the apodosis begin at a 12 ἢ ψυχὴ δέ, but the clause beginning with these words is wanted as one of the premisses of the argument. "The first premiss gives expression to a fact of linguistic usage, the fact, viz. that under  $\phi$  ἐπιστάμεθα we can understand at once ἐπιστήμη and ψυχὴ, just as under  $\phi$  ὑγαίνομεν we can understand ὑγίεια or σῶμα. The second brings out the import of this use of language by showing that the first of the two meanings denotes the form and notion, the second the receptive subject or substratum. The third premiss finally maintains that the soul is that through which we live and think πρώτως, in the truest and most proper sense of the terms, and the conclusion therefore follows that soul is the λόγος and εἶδος, rather than the ὅλη or ὑποκείμενον" (Bonitz, *Arist. Stud.* II. 121). Other and less satisfactory modes of dealing with the sentence may briefly be noticed: (1) Trend. would alter ἐπεὶ δὲ into ἔτι δὲ quite unnecessarily, as Bonitz shows; (2) Torstrik would make the apodosis begin with a 12 ἢ ψυχὴ δὲ τοῦτο  $\phi$  ζῶμεν καὶ αἰσθανόμεθα καὶ διανοούμεθα πρώτως; (3) Pacius finds the apodosis in a 8 τούτων δ' ἢ μὲν ἐπιστήμη κτέ.

a 5 καθάπερ  $\phi$  ἐπιστάμεθα (λέγομεν δὲ τὸ μὲν...δ ψυχὴν). If we omit the δὲ with Bonitz and Biehl, there will be no comma before λέγομεν, which will then be constructed with καθάπερ, "just as by the phrase  $\phi$  ἐπιστάμεθα we mean" etc. If we retain δὲ the καθάπερ will be retrospective, the comma after ἐπιστάμεθα will be required, and λέγομεν δὲ will introduce an explanatory sentence "now we mean by it" etc.

a 7.  $\phi$  ὑγαίνομεν. Prof. Bywater remarks in *Journ. of Phil.*, vol. XVII. p. 55, "I think we might with advantage bracket the  $\phi$  before ὑγαίνομεν; with the  $\phi$  the clause as a whole ought surely to have run thus: ὁμοίως δὲ καὶ  $\phi$  ὑγαίνομεν τὸ μὲν ὑγίεια [or ὑγίειαν] τὸ δὲ μόριόν τι τοῦ σώματος ἢ καὶ ὅλον." This is undoubtedly the case, but I take the ungrammatical datives ὑγίεια...μορίῳ...ὅλῳ to be genuine, assimilated by inadvertence to the preceding  $\phi$  and ἑκατέρῳ: this opinion is strengthened rather than weakened by the fact that in some inferior MSS. (X and pr. S) the alteration to ὑγίειαν is found, doubtless on the scribe's conjecture. τὸ μὲν ὑγίεια, int. λέγεται or φαμέν ὑγαίνειν, if it is worth while to preserve grammatical accuracy where the writer is notoriously careless.

a 8. τούτων δ' ἢ μὲν ἐπιστήμη. Here begins the second premiss of the three marked by Bonitz. Τούτων, i.e. of these meanings or implications of the phrases  $\phi$  ἐπιστάμεθα and  $\phi$  ὑγαίνομεν.

a 9. μορφή καὶ εἶδος τι. Cf. 412 a 8, *note*. καὶ λόγος. Cf. 412 b 16 (also 403 b 2). οἷον ἐνέργεια, "active operation." This, properly speaking, differs somewhat from actuality (ἐντελέχεια). When opposed to ἐνέργεια, δύναμις denotes capacity of action, ἐνέργεια being actual operation. Opposed to ἐντελέχεια, δύναμις denotes a capacity of existence or development, the power of becoming something, ἐντελέχεια being actual existence or realisation. To return to the instance given in 412 a 22—28, τὸ θεωρεῖν is, more properly, active operation, the exercise of knowledge, while ἐπιστήμη is knowledge which may be in abey-

ance, implicit actuality. But the proof of this actuality of existence is to be found in active operation. The proof that a fleet is in being is that it is doing its work. Hence *ἐνέργεια* will often do as well as *ἐντελέχεια* and is constantly so used in the *Metaphysics*. One reason why *ἐντελέχεια* is preferred in *De A.* probably is, that soul is made analogous to the first or implicit stage of actuality, to *ἐπιστήμη* and not to *θεωρεῖν*, comatose body being itself alive and therefore endowed with soul, even though not actively operant. At this point (II., cc. I, 2) A. is not concerned whether soul is a distinct entity or a mere operation of the living body. He has framed a definition wide enough to include all operations of the animate being, whichever of these two alternatives he ultimately adopts. For this purpose as a rule he prefers the term *ἐντελέχεια*; thus in 412 a 22—24, where sleep is contrasted with waking, and knowledge in abeyance with the application of knowledge, soul is put on a level with sleep and knowledge in abeyance, because life begins with its implicit presence: it need not at once be explicit. Sleep is analogous to *ἔχειν καὶ μὴ ἐνεργεῖν*, that is *ψυχὴ* exists before *ἐνέργεια* comes in. Here however, in opposition to the mere *δύναμις* of *ὕλη*, soul in sleep may be regarded as a sort of energy or activity.

a 10. τοῦ δεκτικοῦ, the recipient, the subject of which attributes are predicated=τὸ ὑποκείμενον. ὑγιαστικοῦ. There seems no reason to change this to ὑγιαστοῦ; see critical notes. From *Phys.* VIII. 5, 257 a 14—19 it is clear that ὑγιαστικὸν stands to ὑγιαστὸν as *κινητικὸν* to *κινητόν*, and it might be thought that, though the recipient is regarded as active in respect of knowledge, yet in respect of health he is regarded as passive. But just as *ὑγιεινὸν* is explained to be not merely that which produces or preserves or marks health, but also that which is the recipient of health (*Metaph.* 1003 a 34 ἀλλ' ὥσπερ καὶ τὸ ὑγιεινὸν ἄπαν πρὸς ὑγίειαν, τὸ μὲν τῷ φυλάττειν, τὸ δὲ τῷ ποιεῖν, τὸ δὲ τῷ σημείον εἶναι τῆς ὑγείας, τὸ δ' ὅτι δεκτικὸν αὐτῆς), so also with τὸ ὑγιαστικόν. That Philop. and Simpl. should vary the term in paraphrasing is what we might expect.

a 11 δοκεῖ...12 ἐνέργεια. A general principle fully endorsed by A. See 426 a 2—11 with notes. The word *διατιθεμένῳ* implies a temporary condition or disposition, as does *διάθεσις* generally. As *πάσχοντι* and *διατιθεμένῳ* are joined here, so *πάθος* is joined with *διάθεσις* in *Phys.* II. 1, 193 a 25 τὰ δὲ ἅλλα πάντα πάθη τούτων καὶ ἔξεις καὶ διαθέσεις.

a 12. ἡ ψυχὴ δὲ. This is the third premiss noted by Bonitz.

a 13. πρώτως. As Bonitz points out, this means "in the primary and principal sense"; the adverb is often joined with *κυρίως*, and *ἀπλῶς* and *καθ' αὐτὸ* are equivalent expressions. Each thing is said to be what it really is (ὅπερ ἕκαστόν τι) in virtue primarily of its form, and only secondarily in virtue of its matter. The force of *πρώτως* is to bring out the fundamental position of the soul in life. We live and perceive by the body, but we cannot be said to do so *πρώτως*. Cf. *Metaph.* 1022 a 31 καὶ ζῇ ὁ ἄνθρωπος καθ' αὐτόν· ἡ γὰρ ψυχὴ μέρος τι τοῦ ἀνθρώπου, ἐν ᾗ πρώτη τὸ ζῆν. See also note on 403 b 29. ὥστε λόγος introduces the apodosis. Disengaging the argument from its complications, we may briefly state it thus: It is primarily in virtue of its form that a given thing is said to have such and such a property. Now it is primarily in virtue of soul that a thing is said to have life. Therefore soul is the form of the living being, the *ἐμψυχόν τι*.

a 15. καθάπερ εἰπομεν, viz. 412 a 6—11.

a 17. ἐπεὶ τὸ ἐξ ἄμφοιν. This is a most important link in the argument, and its insertion here tends to clear up the obscurities of the parallel passage in 412 a 16—22, where see notes. The reasoning here is as follows: Composite substance consists invariably of form and matter. The animate being (τὸ

ἔμψυχον) is such a composite substance consisting of form and matter. Since therefore in this case the composite substance is animate or endowed with soul [and it has been proved that soul is form, 414 a 13 ὥστε λόγος κτέ.], it follows that soul is the form of body, not body the form of soul, and, we may add, the form or entelechy of a certain sort of body (σώματος τινος), namely (as we learnt in II., c. 1) a natural body provided with organs.

**414 a 19—28.** This definition agrees with the views of those who, while distinguishing soul from what is corporeal, make it to depend on body. Not only so, but it is dependent on a body of a definite kind, and our predecessors were wrong in supposing that any and every sort of body could be tenanted by any and every soul [§ 14]. This result is just what we should expect: as every entelechy has its appropriate matter, so, too, has soul, being as it is the entelechy of a body so constituted as to be capable of being tenanted by soul [§ 15].

As here soul is not a body, though at the same time it is something belonging to and dependent upon a body, so in *De Sensu* 6, 446 b 25 sq. the objects of the telepathic senses, colours, odours and sounds, are declared to be not bodies, though at the same time not independent of bodies. The special sensibles are qualities; and in some cases they are κινήσεις, varieties of motion: ἔστι δ' οὔτε σώματα ταῦτα, ἀλλὰ πάθος καὶ κίνησις τις (οὐ γὰρ ἂν τοῦτο συνέβαιεν), οὐδ' ἄνευ σώματος.

**a 19. οἷς δοκεῖ.** The reference is not clear. Bonitz suggests that, whoever else are intended, the words exactly suit the view of soul as a harmony maintained by Simmias in Plato, *Phaedo*, 85 E sqq.; the harmony is not the lyre, but is something invisible and incorporeal dependent upon it, and ceases to exist when the strings are broken.

**a 21. σώματος δέ τι.** The genitive expresses relation in the most general way. Compare its use in Plato, *Rep.* 438 A ἀλλὰ μέντοι, ἣν δ' ἐγώ, ὅσα γ' ἐστὶ τοιαῦτα οἷα εἶναι του, τὰ μὲν ποιά ἅττα ποιῶν τινός ἐστιν, ὡς ἐμοὶ δοκεῖ, τὰ δ' αὐτὰ ἕκαστα αὐτοῦ ἐκάστου μόνον. It is not easy to find an English equivalent which will express this suitably. "Function" in the mathematical sense might serve, but from its biological associations has become unsuitable. To A. the relation is not one of subordination, but of coordinate reciprocity.

**a 22. τοιούτῳ.** This adjective="of a suitable kind," and anticipates the more explicit description at the close of the chapter (τοῦ δύναμιν ἔχοντος εἶναι τοιούτου, 414 a 28). καὶ οὐχ ὥσπερ. The literal rendering "contrary to the view of our predecessors" etc. is so clumsy that it is convenient to substitute "whereas" or the like. οἱ πρότερον, the Pythagoreans more especially. See 407 b 13—26.

**a 23. τίνι καὶ ποίῳ.** See 407 b 13—19, where the same objection is urged.

**a 24. τοῦ τυχόντος.** See *note* on 407 b 19.

**a 25. οὕτω δὲ γίνεσθαι.** I take γίνεσθαι as almost equivalent to συμβαίνειν. "The thing happens in this way," i.e. the soul is found in a body of a definite kind, ὑπάρχει ἐν σώματι τοιούτῳ. Them. replaces οὕτω by νῦν δέ, "in point of fact." καὶ, "in fact," emphasising the following words, as in 412 a 16 καὶ σῶμα τοιόνδε κατὰ λόγον, "as we might expect." In this sense contrasted with παρὰ λόγον or, as in Thuc. III. 39. § 4, παρὰ δόξαν,=contrary to expectation. So Bonitz *ad Metaph.* 989 a 30: Ubi κατὰ λόγον usurpatur, nomine λόγος nec per adiectivum nec per pronomen definito, perinde atque εὐλόγως id significat, quod rationibus ad rem pertinentibus accommodatum est et consentaneum. Here "as we might expect from analogy," and this gives a good meaning to γάρ, for soul in body of a certain kind is only a particular application of the general law or tendency (πέφυκεν) that the entelechy of each thing is manifested in an appropriate



matter, in that which has the potentiality of becoming such a thing. Bonitz cites for *κατὰ λόγον* in the sense of *εὐλόγως* *Metaph.* 1088 a 4 (cf. a 6), *Phys.* III. 7, 207 a 33, *De Resp.* 12, 476 b 14, while in *De Part. An.* III. 4, 666 a 18 sq. he notes that it is opposed to *κατ' αἴσθησιν*. See also *Pol.* 1257 a 31. Some, e.g. Philop., suppose that here there is that antithesis between *τὰ γινόμενα*, facts, and *οἱ λόγοι*, theories, which is frequently found in A. Accordingly, taking *καί*=“and,” Philop. (248, 1) paraphrases *ὥς δὲ ἡμεῖς εἵπομεν...καὶ τὰ φαινόμενα οὕτως ἔχοντα μαρτυρεῖ καὶ ὁ λόγος*. But this strains the words unnaturally, and no such antithesis seems to be intended. We are concerned with *ἡ τοῦ λόγου ἐνάργεια* (418 b 24), not directly with *τὰ φαινόμενα*. *Γίνεται* does not, any more than a 23 *ἐνῆρμοζον*, express a fact of experience, but a conclusion reached by the whole train of reasoning from 414 a 4. The question is, not whether facts support the theory or the theory the facts, but whether one theory is in accordance with another.

a 25. *ἐκάστων*. Them. interprets as follows (46, 37 H., 86, 5 Sp.) *νῦν δὲ γίνεται κατὰ λόγον· οὐ γὰρ πᾶσα ψυχὴ παντὸς σώματος εἰδὸς ἐστίν, ἀλλὰ τοῦ πρὸς αὐτὴν ὀργανικῶς κατεσκευασμένου καὶ ἔχοντος πρὸς τὰς ὑπαρχούσας τῇ ψυχῇ δυνάμεις ἐπιτηδείως*. He must have restricted *ἐκάστων* to animate bodies. But unquestionably the reference is wider: cf. 417 b 3 *τοῦ δυνάμει ὄντος ὑπὸ τοῦ ἐντελεχείᾳ ὄντος καὶ ὁμοίου οὕτως ὥς δύναμις ἔχει πρὸς ἐντελέχειαν*. So Philop. (248, 3) *ἡ γὰρ τῶος, φησὶν, ἐντελέχεια ἐν ἐκείνῳ γίνεσθαι πέφυκεν, ὃ φύσει ἔχει δύναμιν τοιοῦτον εἶναι· τοιοῦτον δὲ ἐστὶν ἡ ἐκάστου προσεχὴς ὕλη. οὐδὲ γὰρ ἡ τυχοῦσα ὕλη τὸ τυχόν εἶδος δέξασθαι δύναται*. So also Simpl. (105, 13) *τὸ δυνάμει ἐκασταχοῦ τοιοῦτον ὁποῖα ἡ ἐντελέχεια*.

a 28. *τοιούτου*, i.q. *ἐμψύχου*. For this logical flaw in the definition see *note* on 412 a 21. Body and soul being correlative as matter and form, neither can exist and neither can be known apart from the other. Philop. 248, 8 *ἀνάγκη ἄρα τῷ περὶ ψυχῆς λόγῳ καὶ τὸν περὶ τοῦ δεκτικοῦ σώματος συνεισάγεσθαι, ἐπεὶ καὶ τῶν πρὸς τι ταῦτα, ἡ ὕλη φημὶ καὶ τὸ εἶδος, τὰ δὲ πρὸς τι χωρὶς ἀλλήλων ἢ εἶναι ἢ γνωσθῆναι ἀδύνατον, ἢ τοιαῦτά ἐστι*.

### CHAPTER III.

**414 a 29—b 19.** The powers of the soul are variously distributed [§ 1], nutrition occurring singly in plants or together with other powers in animals. With the sentient faculty in animals goes appetency or desire. This follows from two considerations: (1) that all animals have at least the sense of touch; and (2) that sense-perception is invariably accompanied by feelings of pleasure and pain and these latter by appetite, a form of appetency or desire [§ 2]. Touch is employed upon food and implies the appetites of hunger and thirst. To these three faculties, the nutritive, the sensitive, the appetitive [§ 3], reserving imagination for a later enquiry, may be added the faculties of locomotion and understanding, found in some animals only. Understanding is confined to man and any beings superior to man, if any such exist [§ 4].

414 a 30. *καθάπερ εἵπομεν*. Cf. *supra* 413 a 31 sqq., b 32—414 a 1.

a 31. *δυνάμεις δ' εἵπομεν*, viz. 413 a 23—25, b 11—13, and it also appeared 413 b 21—24 that sensation implied appetency. On the other hand there is no separate mention of τὸ φανταστικόν. A.'s indifference to a complete enumeration and the provisional or tentative character of those which he gives are further illustrated 432 a 22—b 8, 433 b 1—5.

a 33. τὸ θρεπτικόν. Cf. 413 a 31—b 4. ἑτέροις δὲ, i.e. all animals: cf. 413 a 31—b 9.

414 b 1. εἰ δὲ τὸ αἰσθητικόν, καὶ τὸ ὀρεκτικόν. The proof which follows b 1—15 holds for ἐπιθυμία or appetite only, the lowest form of ὄρεξις. Them. 47, 13 H., 86, 26 Sp. καὶ οὐ τοῦτο λέγω, ὅτι τοῖς αἰσθανομένοις ἅπασιν ἡ ὀρεκτικὴ πᾶσα ὑπάρχει· πολλοῖς γὰρ οὔτε θυμὸς οὔτε βούλησις, ἀλλ' ἐπιθυμία μόνον. It is tempting to equate τὸ ὀρεκτικόν with the φύσις τῆς ψυχῆς ἁλογος, μετέχουσα μέντοι πῇ λόγου of *Eth. Nic.* 1102 b 13. Cf. *ib.* b 30 τὸ δ' ἐπιθυμητικὸν καὶ ὅλως ὀρεκτικὸν μετέχει πως [int. λόγου] κτέ. There is no mention of φαντασία until we come to 414 b 16. In 432 a 31 sqq. τὸ φανταστικόν appears between τὸ αἰσθητικόν and τὸ ὀρεκτικόν.

b 2. ὄρεξις. Though not always consistent, A. in the main adheres to the nomenclature here adopted, according to which ὄρεξις is a generic term for that which appears in the rational soul as βούλησις (wish or conation) and in the irrational soul as θυμὸς and ἐπιθυμία; cf. especially *infra* 432 b 5 sq. and see *note* on 411 a 28.

b 3. μίαν γε. Cf. 413 b 4 sq.

b 4. ᾧ δ' αἰσθησις ὑπάρχει, v. *supra* 413 b 16—24. ἡδονή τε καὶ λύπη καὶ τὸ ἡδύ τε καὶ λυπηρόν. By ἡδονή τε καὶ λύπη [int. ὑπάρχει] is meant that the creature can feel pleasure and pain (ὑπάρχει τινὶ αἰσθησις καὶ ἡδονή = αἰσθάνεται τις καὶ ἡδεται), but this is not the sense of τούτῳ ὑπάρχει τὸ ἡδύ τε καὶ λυπηρόν. These words must mean that the creature has for objects what is pleasant and what is painful. The pleasure and pain reside in the percipient, the pleasurable and painfulness in the object perceived. The mode of statement is careless. "Pleasure and pain" are feelings in the animals of whom they are predicated (ὑπάρχει). Sense is a discriminative faculty and accordingly the sentient animal learns to discriminate not only its own feelings (πάθη), but also the causes of those feelings. Simpl. 105, 19 sq. τὰ δὲ ὡς ποιητικὰ τῶν παθῶν, viz. the pleasurable, or pleasure-giving object, and the painful. But pleasurable and painful objects cannot strictly be attributed to the sentient animal.

b 5. τοῦ γὰρ ἡδέος ὄρεξις αὕτη: αὕτη means ἐπιθυμία, the gender of the pronoun τοῦτο is assimilated to that of ὄρεξις. If what is pleasant is the object desired when we are under the influence of ἐπιθυμία, its force is greatest while the pleasure is felt. Thus ὄρεξις would follow upon αἰσθησις automatically. There would be little need to interpose the link of φαντασία, the after result of sensation.

b 6. ἔτι δὲ. A new step in the argument. The nutriment which animals require is apprehended by touch.

b 8. τούτων δ', int. καθ' αὐτά, as the necessary antithesis to κατὰ συμβεβηκός. Hot, cold, moist, dry, the qualities of body as such, are tangibles *per se*, are perceived directly by touch. Cf. 423 b 27—29. For the different meanings of sensibles *per se* and sensibles *per accidens*, see II., c. 6.

b 9. τῶν δ' ἄλλων αἰσθητῶν κατὰ συμβεβηκός, int. αἰσθησις ἀφή. So Alex. Aphr. ap. Philop. 253, 13 τῶν δὲ ἄλλων αἰσθητῶν, φησὶν ὁ Ἀλέξανδρος, κατὰ συμβεβηκός τὴν ἀφήν εἶπεν ἀντιληπτικὴν εἶναι (cf. 252, 17 sqq.), Simpl. 105, 34. The objects of the other senses are indirectly perceived by touch. By this construction τῶν δ' ἄλλων αἰσθητῶν is made parallel to τούτων in the preceding line. All nutriment is tangible, but all tangibles are not nutriment. Colours, sounds and smells, though tangibles *per accidens*, contribute nothing to nutriment. A. himself lays down in so many words that one of the special senses may perceive *per accidens* the direct objects of the other senses. Cf. 425 a 30 sq. And, as he affirms that in this way we perceive what is sweet by sight (425 a 22, cf. 425 b 1—4), so no doubt he would admit that we, or other animals, *per*

*accidens*, perceive colour (e.g. honey), smell (sweet-scented thyme), or even sound (as of water) by touch.

The alternatives proposed are (1) that of Philop. 253, 21 sqq. who connects the genitive with b 5 sq. ἐπιθυμία or ὀρεξίς, understanding it of the colours and odours of viands and beverages, which are objects of desire by association. This view, though quite unnecessary, is ingenious and at least reasonable. (2) To supply the ellipse from b 8 τρέφεται τὰ ζῶντα πάντα and either alter the genitive to the dative, as is done by Torstrik and by Belger and Wallace after him, or treat the sentence as anacoluthic (the dative could hardly be replaced by partitive genitive after τρέφεται). The latter view (2) has found most favour. Thus Simpl., who fully recognises the grammatical sense of the words, continues (105, 35) οὐ μὴν τοῦτο λέγειν οἶμαι βούλεται, ἀλλὰ κατὰ συμβεβηκὸς τροφίμων τῶν ἄλλων ὄντων αἰσθητῶν ἢ αἰσθήσεις ἀντιλαμβάνεται. Soph. 53, 7 ἀλλὰ τρεφόμεθα μὲν, ὥς εἴρηται, τοῖς κατὰ τὴν ἀφὴν αἰσθητοῖς, τοῖς δὲ ἄλλοις τῶν αἰσθητῶν...οὐ. Soph., then, interprets “nutriment *per accidens*” by “no nutriment at all.” Professor Beare (p. 178) likewise adopts (2) “The objects of other senses nourish only incidentally; just as sound, colour, smell may put an animal on the track of food, but they cannot in themselves feed it.” It comes to this: if it had not been for the colour, sound and scent of the quarry, the captor would not have pursued it; if he had not pursued and caught it, he would not have eaten it; ergo, the colour, sound and scent of the quarry are constructively the nutriment of the captor. This is rather a lawyer-like way of stating the case. The plain facts are given *Eth. Nic.* 1118a 16—23, a 9—13.

b 10 οὐθὲν γὰρ...11 ὁσμὴ. As I have tried to indicate by the brackets, this clause gives the reason, not for the immediately preceding statement that touch is only incidentally concerned with the other sensibles, but for that made b 7 “for touch is the sense concerned with nutriment,” or rather for the first proof of this adduced b 7 ξηροῖς γὰρ...8 πάντα, viz. that the tangibles *per se* form animal nutriment. The first γὰρ clause gives a proof on the positive side that touch is concerned with food: this is now supplemented by showing that no other sense is; colours, sounds and smells being not nutriment at all, neither *per se* nor *per accidens*. Cf. 434 b 19 sq. In *De Sensu* 445 a 16 A. mentions the opinion of some Pythagoreans that certain animals feed upon odours only to reject it as irrational. The force of γὰρ is really obscured by those who, like Simpl., make A. first say “animals are nourished incidentally by the other sensibles” and explain this by the addition “for they are not nourished by colours, sounds and smells at all.”

b 11. ὁ δὲ χυμὸς, flavour, the proper object of taste. A. here, by anticipation, assimilates the object of taste to the object of touch; cf. II., cc. 10, 11 generally, especially 422 a 8 and 423 a 17—20.

b 12. ξηροῦ καὶ θερμοῦ. These are the two qualities of earth, according to the scheme which A. formulates for deriving the “natural bodies” (the so-called four elements) from ultimate matter (pure potentiality) by the superposition of the primary contraries, hot, cold, dry, moist. Similarly water is determined by the conjunction of moist and cold as qualification of ultimate matter (πρώτη ὕλη). Cf. Zeller, *Eng. Trans.* vol. I. p. 479 sqq.

b 13. ἡδυσμὰ τ, a relish to the food, and not in itself food; so Them. (47, 35 H., 87, 29 Sp.). Cf. *De Sensu* 1, 435 b 22—24, 436 b 15 τὸ γὰρ ἡδὺ διακρίνει [int. τὸ ζῶον] καὶ τὸ λυπηρὸν αὐτῇ (int. τῇ γεύσει) περὶ τὴν τροφήν, ὥστε τὸ μὲν φεύγειν τὸ δὲ διακείναι, and 4, 442 a 8 συμμίσγυνται δ' οἱ ἄλλοι χυμοὶ εἰς τὴν τροφήν τὸν αὐτὸν τρόπον τῷ ἀλμυρῷ καὶ ὀξεί, ἀπὲρ ἡδύσματος. Probably this is what is meant by the strange phrase *ib.* 1, 436 b 17 καὶ ὅλως ὁ χυμὸς ἐστὶ τοῦ

*θρεπτικοῦ πάθος* (so Biehl), flavour is a quality of that which is nutritive. *τούτων*, i.e. of things dry, hot, moist and cold, i.e. of food solid or liquid.

b 14. *αὐτῶν*, i.e. foods and flavours. The promised discussion comes when (in cc. 10, 11) the whole subject of *τὰ γευστὰ* and *τὰ ἀπτὰ* is treated.

b 16. *φαντασίας*. Cf. 403 a 8 and *notes*: see more particularly 413 b 22. The uncertainty is not whether sense-perception implies imagination (*φαντασία*) of some sort, but whether, in all animals, this indistinct persistence of sense images really amounts to that which is defined as *φαντασία* in Book III., c. 3; at least this is what appears from 433 b 31—434 a 5. *ὑστερον*. From III., c. 3 no definite result on this point is obtained. But in III., c. 11, 433 b 31—434 a 7 A.'s remarks furnish us with an explicit statement of the problem with an indication of the lines on which he would solve it: "But we must consider the case of animals imperfectly developed, which have only the sense of touch. Is it possible that they should have imagination (*φαντασία*) or not? Or, again, appetite? For it is plain that they feel pleasure and pain. If these, then necessarily also appetite. But how can they have imagination? Or shall we say, that as such creatures move in a vague and undefined manner, so all these powers are present, but present in a vague and undefined manner? Perceptive imagination (*ἡ αἰσθητικὴ φαντασία*) is found in the other animals also, but deliberative (*βουλευτικὴ*) in those only which have reason."

b 18. *τὸ διανοητικὸν τε καὶ νοῦς*. A.'s usage of the two verbs *διανοεῖσθαι*, *νοεῖν* as practically equivalent in meaning is abundantly illustrated throughout the treatise. When he does distinguish between them, he prefers *διανοεῖσθαι* to express the process of judging that *A* is *B* and *νοεῖν* the process of grasping a single object of thought, a notion or the content of a definition. In conformity with this distinction *διανοητικόν* is the reasoning faculty which is discursive, which judges truth and falsehood and draws inferences, while *νοῦς* is intuitive and apprehends.

b 19. *εἴ τι τοιοῦτον ἕτερόν κτέ*. Cf. *Eth. Nic.* 1141 a 20 *ἄτοπον γὰρ εἴ τις τὴν πολιτικὴν ἢ τὴν φρόνησιν σπουδαιότατην οἶεται εἶναι, εἰ μὴ τὸ ἀριστον τῶν ἐν τῷ κόσμῳ ἀνθρώπος ἐστίν*. Also 1141 a 34 *καὶ γὰρ ἀνθρώπου ἄλλα πολὺ θεϊώτερα τὴν φύσιν, οἷον φανερώτατά γε ἐξ ὧν ὁ κόσμος συνέστηκεν*.

**414 b 19—415 a 13.** A. now takes up a question which had been raised in 402 b 5 sq., the question, namely, in what sense the definition of soul has unity, or in what sense there is a single definition of soul. Does it correspond to the definition of animal, or is there a separate definition for each particular soul, as there is a separate definition of horse, dog, man, god, the universal animal being either non-existent or anyhow a posterior and artificial conception, like any other common term? Here he proceeds as follows: soul will have a common definition in the same way as figure. Just as there is no figure other than triangle, quadrilateral, pentagon and the rest, to which the generic definition of figure applies, so there is nothing to which the definition of soul applies, apart from the several varieties of soul. The only definition applicable to soul in general or figure in general is one which will not fit any particular soul or any particular figure, and it is absurd to look for a general notion, in these as in other cases, without investigating the *infimae species* [§ 5]. But just as each plane rectilinear figure is potentially contained in the next, as triangle in quadrilateral, quadrilateral in pentagon, so with the varieties of soul, the nutritive being potentially in the sensitive, the sensitive in the intellective. The right method of enquiry, then, is to ask what constitutes the soul of a plant, of a beast, of a man [§ 6]. Why such a scale exists is a further question, but its existence is a fact, as is also the gradation of the senses, touch alone

being universal and presupposed wherever the other senses are found. Higher still among vital functions comes locomotion, and last of all reasoning and thought. In every case the lower faculty can exist apart from the higher, but the higher presupposes those below it. The position of speculative intellect will be discussed separately [§ 7].

The answer here given amounts to this, that soul is a logical entity only, a mere *καθόλου*. We must study the different sorts of soul in the different animals and after that we may, if we please, frame a definition of soul in the abstract. But we must always remember that soul does not exist first as soul in the abstract and afterwards as nutritive soul, sensitive soul, etc. I have translated *τετράγωνον* (b 31) by "quadrilateral." It should be four-angled figure, but no English word in common use expresses this exactly, for "quadrangle" has other associations, and "tetragon" would be pedantic. Heiberg, *Mathematisches zu Aristoteles* (in *Abhandlungen zur Gesch. der math. Wissenschaften* XVIII. Heft, 1904), p. 15, has the following remarks: "*τετράγωνον* as used by the Pythagoreans meant 'square' (986 a 26) and this is its usual meaning in A. (e.g. 11 a 10, 15 a 30, 306 b 6), its meaning is doubtful in 272 b 19, but 414 b 31 it appears to mean quadrilateral (Viereck) and in 1054 b 2 *τὰ ἴσα καὶ ἰσογώνια τετράγωνα* this must be its meaning if *ἰσογώνια* is to have any sense: in 1054 b 5 either meaning is possible. Probably it was Euclid who finally got rid of the ambiguity by introducing the term *τετράπλευρον*. Neither Plato nor A. was acquainted with *τετράπλευρον*, though it occurs in the spurious writings, *Mechanica* 848 b 20, *Probl.* 911 b 3."

b 20. *τὸν αὐτὸν τρόπον*, "in exactly the same way," neither more nor less. There is no real object denoted by figure, the genus or universal, except and apart from the various particular figures. And similarly to soul, the genus or universal, there corresponds nothing except and apart from the several varieties of soul. A purely generic definition of figure, as of soul, can indeed be framed in words, but there is nothing in *rerum natura*, apart from the particular varieties of figure, that it defines. εἰς ἃν εἴη λόγος. An echo of 402 b 5 *εὐλαβητέον δ' ὅπως μὴ λανθάνῃ πότερον εἰς ὁ λόγος αὐτῆς ἐστὶ, καθάπερ ζῷον*. The precise analogue of soul, it now appears, is not so much "animal" as "figure," i.e. plane rectilinear figure, *σχῆμα ἐπίπεδον εὐθύγραμμον*.

b 21. *ἐκεῖ*, "in the latter case," in the instance adduced for purposes of illustration, i.e. figure, a subject properly foreign to the discussion and so further off. *παρὰ*, "beside," "other than." Cf. 408 a 23, 424 b 22. *τρίγωνόν ἐστι καὶ τὰ ἑξῆς*. By beginning with triangle and going on to quadrilateral, pentagon etc., A. shows that he is thinking exclusively of rectilinear figures. Otherwise circle, which is bounded by one line, or segment of circle, bounded by two lines, would come before triangle, which is the first only if the series be of rectilinear figures. Cf. *Μεταφ.* 1054 a 3: if the universe consisted of nothing but rectilinear figures, *σχήματα εὐθύγραμμα*, the triangle would be the unit of its plurality.

b 22. *ἐνταῦθα*, "in the case in hand," the subject under discussion, soul. *τὰς εἰρημέναις*, the grades of soul enumerated at the beginning of this chapter (414 a 29—32), as also in 413 b 10—13. *γίνονται δ' ἃν*. Probably concessive: "it is possible to frame a generic definition, which shall be one and the same (εἰς λόγος)."

b 23. *καὶ ἐπὶ τῶν σχημάτων*. The genitive here and the dative b 24 after *ἐπὶ* give much the same sense. As with figures, so, too, with the different varieties of soul. In fact we have already framed such a general definition of soul, 412 b 4—6. The corresponding definition would be for figure generally, "that which is enclosed by one or more lines," and for rectilinear figure (which A. has in mind:

cf. Simpl. 106, 36 sq.) "that which is enclosed by three or more straight lines." Such definitions convey no information about any of the particular figures. Nor does the general definition of II., c. 1 give any information about any particular kind of soul. The only vital functions which it recognised were those common to all animals and all plants (412 a 14). *ἐφαρμόσει μὲν πᾶσιν.* Cf. note on 408 a 5.

b 25. *διὸ*, "and hence," i.e. because the genus figure or the genus soul denotes nothing apart from particular figures or particular souls. *γελοῖον.* The proceeding declared to be absurd is not the search for generic definitions in itself, but the neglect while seeking them to define also the particular variation of the subject under investigation. So Simpl. 107, 39 *οὐχ ἀπλῶς βούλεται γελοῖον εἶναι τὸ ζητεῖν τὸν κοινὸν λόγον, ἀλλὰ τὸ ζητεῖν τὸ κοινὸν ἀφέντα τὸ κατὰ τὸ οἰκείον καὶ ἄτομον εἶδος.* Cf. Philop. 257, 7—14. In other words, we must not be satisfied with the generic definition of soul obtained in II., c. 1, but must go on to a detailed investigation of the different forms of soul. It is in fact this investigation which is the main subject of the rest of the treatise.

b 26. *ἐπὶ τούτων*, i.e. in the case of figure or of soul. *ἐφ' ἑτέρων.* This may refer to or include the real genera of zoology and botany. As Philop. (257, 17 sq.) puts it, even if we were studying the genus animal, it would not be enough, unless we proceed to study the different species of animals: *a fortiori* is this true in the case of "soul," which is a genus *per analogiam*. *οὐδενὸς ἔσται τῶν ὄντων.* What the merely generic definition defines is, in their cases, something non-existent. The *κοινὸν* (to use the language of 402 b 7 sq.) is not merely *ὑπερτον*, it is *οὐθέν*.

b 27. *οὐδὲ κατὰ τὸ οἰκείον καὶ τὸ ἄτομον εἶδος.* Believing that these words form part of the relative clause, I am unable to retain the comma after *λόγος*, much less a colon. The phrase *εἶναι κατὰ τὸ οἰκείον καὶ τὸ ἄτομον εἶδος* bears much the same meaning as *τῷ οἰκείῳ καὶ τῷ ἀτόμῳ εἶδει ἐφαρμόζειν* (cf. b 23 *ἐφαρμόσει μὲν πᾶσιν*) or *εἶναι ἴδιος λόγος τοῦ εἶδους*. The article *τὸ* has virtually a distributive force. Whatever species we are studying is the appropriate one for the definition to fit. By *ἄτομον εἶδος* is meant the infima species which cannot be further subdivided by differences. Cf. *ὃν μηκέτι ἐστὶ διαφορὰ Anal. Post. II. 13, 97 a 19*, or, as Alex. describes them, *τὰ ἐσχατὰ εἶδη, ἃ οὐκέτι διαφοραῖς διαιρεῖται*. The adjective *ἄτομος* is also used by A. in his logical writings to denote individuals or particular things, *τὰ καθ' ἕκαστα* or *τινά*. In order to guard against mistake, when infimae species are intended some word is added, e.g. *ἄτομα εἶδη*, *ἄτομα εἶδει* or *ἄτομα τῷ γένει*, when the context itself does not determine the meaning intended (see Zeller, *Eng. Trans.* vol. I., p. 222 n. 2, p. 216 n. 1).

b 27. *ἀφέντας τὸν τοιοῦτον.* These words, which are specially important for the interpretation of the sentence, are best referred to the *οἰκείον καὶ ἄτομον εἶδος* just mentioned. If so, *τὸν τοιοῦτον* = *τὸν κατὰ τὸ οἰκείον καὶ τὸ ἄτομον εἶδος* (int. *λόγον*). The participle *ἀφέντας* is harsh. It of course agrees with the subject of *ζητεῖν*, and has a conditional force "if (by so doing) we neglect the definition of the particular species."

Wallace rightly paraphrases the whole sentence: "And hence it is absurd both in this case and in others to seek for a universal definition which shall be peculiar to no one form of existence nor framed with reference to the particular and individual species, if such common definition makes us neglect particular analysis." Pacius (as did Them. before him) refers *τὸν τοιοῦτον* to A.'s own definition as given in II., c. 1. Zabarella and M. Rodier in his translation make it refer to *τὸν κοινὸν λόγον*. Trend. suggested that it might be taken as = *ad certam qualitatem redacta* (int. *notio*), which is almost equivalent to "a specific definition." Of

these the first is the most unreasonable. Again, it has been proposed to regard A. as mediating between an excessive attachment either to the generic or to the particular definition, and some, who adopt this view, seem to understand *ζητεῖν* with *οὐδὲ κατὰ τὸ οἰκείον καὶ τὸ ἄτομον εἶδος*. But this would require *μηδέ*, and not *οὐδέ*. Others in place of *οὐδέ* would read *οὐδὲ <δεῖ>*. The sense would then be, "but again we ought not to confine ourselves to the appropriate individual species," to the neglect of the generic definition. This interpretation, though professedly making A. hold the balance impartially between the generic and specific definition, is diametrically opposed to the one I prefer, so far as regards the words *τὸν τοιοῦτον*, but no result in the treatise is, as a matter of fact, deduced from the generic definition except that soul is moving and final cause, as well as form, of living body, 415 b 8 sqq. The study of soul in the abstract leads to no discoveries and would therefore be exposed to the censure which A. has unsparingly bestowed upon definitions, such as harmony, 408 a 3—5, or self-moving number, 409 b 13—18.

b 28. *τῷ περὶ τῶν σχημάτων καὶ τὰ κατὰ ψυχὴν*. There does not seem to be much difference between these prepositions as here used, nor between either and *ἐπὶ* c. gen. or (less commonly, as *supra* b 24) c. dat. Cf. also *τὰ περὶ τὸν νοῦν*, 429 b 22.

b 29. *ἐν τῷ ἐφεξῆς ὑπάρχει δυνάμει τὸ πρότερον*. Here, as wherever *ἐν οἷς ἐστὶ τὸ πρότερον καὶ τὸ ὕστερον* denotes a class of concepts, the priority intended is not priority in time. Its nature could not be better illustrated than by this example of figures. A. holds the triangle to be the simplest rectilinear figure (seeing that two straight lines cannot enclose a space). Given the triangle, the quadrilateral, pentagon etc. can be derived from it by combining two, three or more triangles; while, if there were no such thing as a triangle, the other rectilinear figures, thus dependent upon it, could not exist. The triangle has thus a logical priority among rectilinear figures: it is presupposed by them. Other examples are arithmetical numbers (*Metaph.* 999 a 6 sqq., 1080 b 11 sqq.), polities and forms of constitution (*Pol.* 1275 a 35 sqq.). In all these the relation between the varieties (of figure, number, polity, and so likewise of soul) is not a relation between species of a genus proper, the latter being mutually exclusive. If e.g. we divide *ζῷον* into *ἔναιμον* and *ἀναιμον*, nothing *ἔναιμον* can be *ἀναιμον*, the divisions are mutually exclusive. Whereas *αἰσθητικόν* is at the same time, potentially, *θρεπτικόν*. *δυνάμει*. If we draw the diagonal of our quadrilateral what was potentially triangle becomes actually so.

b 32. *ὥστε*. This is the conclusion which follows so soon as we learn the true nature of the varieties of soul. To have found a generic definition does not free us from the obligation to investigate each form separately. Those, however, can only be studied in the concrete, in plant, in beast, in man.

b 33. *διὰ τίνα δ' αἰτίαν*. The reason is that nature does nothing in vain. All other animals are subservient to man: *De Part. An.* IV. 10, *Pol.* 1256 b 15—26, *Metaph.* 1075 a 16 sqq.

415 a 1. *σκεπτόν*. The sequence is accounted for on teleological grounds in III. cc. 12, 13, the assumption given in the last note being the starting point. *ἀνευ μὲν γὰρ*. The *γὰρ* certainly does not introduce the reason of the fact asserted, but merely justifies the assertion, expanding *τῷ ἐφεξῆς οὕτως ἔχουσι*.

a 2. *χωρίζεται*. Cf. *supra* 413 a 31 and 410 b 19—24.

a 4. *ἀφή*. Cf. *supra* 414 a 3.

a 5. *πολλά*. Of these lower forms of life, sponges, zoophytes, and some crustacea were known to the ancients and are mentioned by A., who also asserts

(*Metaph.* 980 b 23) that bees have no sense of hearing. Whether ants can hear has not yet been finally determined.

a 7. τὰ δ' οὐκ ἔχει. Cf. 410 b 19, 413 b 2 sq.

a 10. τοῖς μὲν οὐδὲ φαντασία. That some inferior animals have not φαντασία is implied in 428 a 8 εἴτα αἰσθησις μὲν ἀεὶ πάρεστι, φαντασία δ' οὐ. εἰ δὲ τῇ ἐνεργείᾳ τὸ αὐτό, πᾶσιν ἂν ἐνδέχοιτο τοῖς θηρίοις φαντασίαν ὑπάρχειν: cf. 428 a 21 τῶν δὲ θηρίων οὐθενὶ ὑπάρχει πίστις, φαντασία δ' ἐν πολλοῖς, and *ib.* 23 τῶν δὲ θηρίων ἐνίοις φαντασία μὲν ὑπάρχει, where ἐνίοις and πολλοῖς imply that φαντασία is not universally found. This is true, in so far as the term φαντασία is limited (as sometimes it is in A.) to percepts retained. But it is not in this sense of φαντασία that (in 433 a 11 sq. and 434 a 4) it is said to be implied in all αἰσθησις.

a 11. τὰ δὲ ταύτῃ μόνῃ, i.e. animals in general: cf. *Metaph.* 980 b 26. By μόνῃ is implied that they do not rise to the possession of λογισμός, not, of course, that they are without ἐπιθυμία. Cf. 429 a 6 διὰ τὸ μὴ ἔχειν νοῦν, οἷον τὰ θηρία. τοῦ θεωρητικοῦ νοῦ. The subject is finally taken up in III., cc. 4—8.

a 13. οὗτος, i.e. the account of the several faculties which it has now been decided to give. οἰκειότατος. Probably an absolute superlative "as relevant as anything can be." We must not begin by asking what is soul apart from the nutritive, sensitive, intellective faculties, etc. καί, "also," emphasises the περὶ ψυχῆς which follows, "is at the same time the most appropriate description."

## CHAPTER IV.

**415 a 14—22.** Since the study of the several faculties is an integral part of psychology, the student must begin his investigations by ascertaining what each of them is before proceeding further. But if the faculties are to be defined, we must first enquire about the corresponding processes or operations, and this again requires a preliminary investigation of the correlative objects, e.g. the objects of sense and of thought [§ 1].

The order of investigation here prescribed settles the question raised in 402 b 11—15.

415 a 14. μέλλοντα. Cf. for the turn of phrase *Pol.* 1288 b 5.

a 15. περὶ τῶν ἐχομένων καὶ περὶ τῶν ἄλλων. The task proposed in 402 a 7 sq. was twofold, to investigate (1) the essence (οὐσία) of soul, and (2) its properties (ὅσα συμβέβηκε περὶ αὐτήν) which must be taken to mean "essential properties," καθ' αὐτὰ συμβεβηκότα, and are explained (*loc. cit.*) to include properties shared by the body as well as those, if any, peculiar to the soul itself. We should have expected the same twofold division here, but in place of τὰ καθ' αὐτὰ ὑπάρχοντα, τὰ ἐχόμενα καὶ τὰ ἄλλα are apparently substituted. These are general expressions, "what comes next, and the rest," and Them. passes over τὰ ἄλλα altogether. He says (49, 15 H., 90, 17 Sp.) ἐχόμενα δὲ ἐστὶ τὰ καθ' αὐτὰ ὑπάρχοντα ἐκάστη δυνάμει. Philop. (263, 13 sqq.) agrees as to τὰ ἐχόμενα, while offering a number of suggestions as to τὰ ἄλλα (263, 18—24). Simpl. (109, 16 sq. σημαίνει δὲ τὸ μὲν εἶδος τῷ τί ἐστὶ, τοῖς ἐχομένοις δὲ τὰ ὀριζόμενα, ὡς τοῖς ἄλλοις τὰ ὑπάρχοντα) is clearly astray. After the essence must come the essential properties. It can hardly be maintained that in the present treatise these properties are exhaustively discussed, and this is A.'s own admission at the opening of the *De Sensu*, where, in a passage (436 a 1—b 1) too long to quote in full, he sketches the programme of the *Parva Naturalia* (ἐχόμενόν ἐστι ποιήσασθαι τὴν ἐπίσκεψιν περὶ τῶν ζώων καὶ τῶν ζῶν ἐχόντων ἀπάντων, τίνες εἰσὶν



ἴδια καὶ τίνες κοιναὶ πράξεις αὐτῶν. τὰ μὲν οὖν εἰρημένα περὶ ψυχῆς ὑποκείσθω, περὶ δὲ τῶν λοιπῶν λέγωμεν κτέ.). If we are to distinguish between τὰ ἐχόμενα and τὰ ἄλλα, which is at least doubtful, it may be conjectured that the last items on this programme, *De Sensu* 436 a 12—19, Health and Sickness, Youth and Old Age, constitute τὰ ἄλλα, "other matters," while τὰ ἐχόμενα are the essential properties of the several faculties.

a 18. *πρότερον ἔτι λεκτέον*. Cf. 402 b 9—16. The questions as to priority there raised are here decided. What are there called τὰ ἔργα are here called αἱ ἐνέργειαι καὶ αἱ πράξεις.

a 19. *κατὰ τὸν λόγον*. These words go closely with *πρότεραι*. The priority is a logical priority. Two views of this phrase have been taken, according as it does or does not mean the same as *οὐσία πρότερον*. In the former case it is "in the order of thought"—in the order of real existence, in nature's order; in the latter case we should render "in the order of our thought" or of knowledge. *Ind. Ar.* 435 a 6 *λόγῳ πρότερον* vel ita usurpatur ut distinguatur ab eo quod est *οὐσία πρότερον*...vel ut idem sit ac *πρότερον οὐσία*. Bonitz inclines to the view of the Greek commentators, for Alex. Aphr. (ap. Philop. 264, 15—24), Philop. (264, 11—15), and Simpl. (109, 24—30) fairly agree with Them., according to whom (49, 18 sqq. H., 90, 21 sqq. Sp.) it is relatively to us that activities are prior and better known. What takes place, the operation or function, is relatively clear: the faculty or part of the soul is relatively obscure to us. We observe operations and from them infer the presence of the faculty which exists to realise them. But in the order of nature it is the reverse; the faculties must exist before they can operate. It should be remembered that the enquiry before us is methodological. Them. explains *πρότεραι* by *σαφέστεραι πρὸς ἡμᾶς*, more evident from our point of view. Thus we select for earlier treatment what is easier for us to understand and after studying this we shall be in a better position to explain what remains. This priority of the operation to the faculty in the order of knowledge would alone be ample justification for A.'s procedure. The priority of *ἐνέργεια* to *δύναμις* is established in *Metaph.* Θ., c. 8, 1049 b 10—12 sqq., viz. its priority *λόγῳ* 1049 b 12—17, *χρόνῳ*, 1049 b 17—1050 a 3, *οὐσία* 1050 a 4 sqq. Cf. 1071 b 12—1072 a 18. It is doubtful, however, whether this doctrine is explicitly present to A.'s mind in our present passage, though he refers to it below 431 a 1 sqq.

a 22. *οἷον*, "namely": *Ind. Ar.* p. 502 a 7 inde eo deflectit usus ut *οἷον* omnino explicandi vim habeat, i q nempe, nimirum, scilicet. Cf. Waitz ad *Categ.* 3, 1 b 18, Bz. ad *Metaph.* 985 b 6. So 421 b 9, 424 b 30, 426 b 27, 429 a 6, 8, 434 b 15. *τροφῆς*. Nutriment in the concrete is co-ordinate, as an object, with sensibles and cognitables. We must study all three objects in order to know about the operations of nutrition, perception and thought respectively.

**415 a 22—b 7.** We begin, then, with the nutritive faculty, the lowest and the most widely distributed. It has two functions, the propagation of the species and assimilation of nutriment. The former is a means to the only immortality which perishable creatures can secure [§ 2].

a 23. *τροφῆς*. As this word can mean nutrition as well as nutriment, it is fitly co-ordinated with *γέννησις*.

a 26. *γεννήσαι*. Cf. *De Gen. An.* II. 4, 740 b 34 ἡ γὰρ αὕτη ἐστὶν ὅλη ἡ αὐξάνεται καὶ ἐξ ἧς συνίσταται τὸ πρῶτον, ὥστε καὶ ἡ ποιοῦσα δύναμις ταῦτο τῷ ἐξ ἀρχῆς. μείζων δὲ αὕτη ἐστίν. εἰ οὖν αὕτη ἐστὶν ἡ θρεπτικὴ ψυχὴ, αὕτη ἐστὶ καὶ ἡ γεννώσα· καὶ τοῦτ' ἐστὶν ἡ φύσις ἡ ἐκάστου, ἐνυπάρχουσα καὶ ἐν φυτοῖς καὶ ἐν ζώοις πᾶσιν. This explains the point of view from which the two functions are regarded as of identical origin, both being moments in that instinct of self-

preservation, which aims at the continued existence of the individual and through him of the race. *φυσικώτατον γάρ*. Cf. *Pol.* 1252 a 26 ἀνάγκη δὴ πρῶτον συνδυάζεσθαι τοὺς ἄνεν ἀλλήλων μὴ δυναμένους εἶναι, οἷον θῆλυ μὲν καὶ ἄρρεν τῆς γενέσεως ἕνεκεν (καὶ τοῦτο οὐκ ἐκ προαιρέσεως, ἀλλ' ὥσπερ καὶ ἐν τοῖς ἄλλοις ζῴοις καὶ φυτοῖς φυσικὸν τὸ ἐφίεσθαι, οἷον αὐτό, τοιοῦτον καταλιπεῖν ἕτερον): also *De Gen. An.* II. 1, 735 a 17—19, I. 23, 731 b 24 sqq., III. 10, 760 a 35 sqq.

a 27 ὅσα τέλεια καὶ μὴ πηρώματα...28 ἔχει. Presumably for ὅσα τέλεια καὶ <ὅσα> μὴ πηρώματά ἐστιν ἢ <μὴ> κτέ. The negative μὴ is to be understood again in the clause ἢ...ἔχει. I have therefore omitted the comma after πηρώματα. Bonitz rightly observes, *Ind. Ar.* 533 b 6, membra a pron ὅσα exorsa interdum liberius cum unjversa enunciatione coniuncta sunt. The notion of ἀτελής is distinct from that of πήρωμα, with which it is often conjoined: cf. 425 a 10, 432 b 22—24. The former is undeveloped, not yet come to maturity, e.g. a boy, the latter is maimed and will never mature. He or it has become an abnormal member of his class by loss of some part or function. In the organic world there are many irregular natural phenomena where nature's design seems thwarted and stops short of perfect realisation. Extreme cases are called monstrosities (τέρατα) and these are παρὰ φύσιν, *De Gen. An.* IV. 4, 770 b 9 sq. But that πηροῦν and πήρωμα are used in a wider signification may be seen from the fact that according to A. the female sex is a stunted or undeveloped male: τὸ γὰρ θῆλυ ὥσπερ ἄρρεν ἐστὶ πεπηρωμένον, *De Gen. An.* II. 3, 737 a 27. The effect of arrested, unequal development is sometimes expressed by νανώδης, which is applied to birds, fishes and even to all bloodless animals when contrasted with higher types and with man.

a 28. αὐτομάτην. A. firmly believed in spontaneous generation, knowing nothing of the germs or bacilli which in certain processes of decomposition, as in fermentation, invisibly generate new organisms and thus account for the apparent spontaneity. ἕτερον [int. τοιοῦτον] οἷον αὐτό. Cf. 415 b 7, 416 b 24, 26, *Pol.* 1252 a 30 cited above in note on a 26.

a 29. τοῦ δὲ καὶ τοῦ θείου. Cf. Plato *Symp.* 206 E δτι αἰεγενές ἐστι καὶ ἀθάνατον ὡς θνητῷ ἢ γέννησις, and 207 A, 207 D ζητεῖ κατὰ τὸ δυνατόν αἰετὲ εἶναι καὶ ἀθάνατος. δύναται δὲ ταύτῃ μόνον, τῇ γενέσει κτέ. Cf. also *Laws* IV. 721 B, C and the spurious treatise *Oecon.* I. 3, 1343 b 23 sq. See Teichmüller, *Studien zur Geschichte der Begriffe*, p. 351.

415 b 2. τὸ δ' οὗ ἕνεκα διττόν. This is of the nature of a footnote. It is repeated below 415 b 20. Probably either here or there it is out of place. We find it again, unnecessarily interrupting the argument, in *Metaph.* 1072 b 2 ἐστι γὰρ τινὶ τὸ οὗ ἕνεκα καὶ τινός, *De Gen. An.* II. 6, 742 a 22 sqq., *Phys.* II. 2, 194 a 35 sq., *Eud. Eth.* VII. 15, 1249 b 15. The end or final cause may be understood as (a) the result for the sake of which, or (b) the person or thing for the sake of whom or which, something is done whether in nature or in art. Medicine (ιατρικὴ) has in view both τὸ οὗ, health, ὑγίεια, and τὸ φῖ the patient, ὁ ὑγιαίνων. The former is that to secure which such and such things are done, that at which the art and the practitioner, or in another sphere nature, aims; the latter is the person or thing in whom or in which and for whose advantage such and such results are attained, the recipient of the benefit, the *cui* of *Cui bono*? In the domain of ethics "happiness" is the end in chief (οὗ) which each man strives to secure for "himself" (φῖ). Cf. *Them.* 50, 11—19 H., 92, 4—15 Sp., *Simpl.* 110, 32—38, *Simpl. in Phys.* 303, 29—304, 6.

b 3. τῇ συνεχείᾳ. The dative marks the mode of participation. The word must here denote continuity or perpetuity of individual existence. That is *συνεχῆς* which coheres and extends without a break; not only extended magni-

tude (cf. 409 a 14), but also time, *Phys.* IV. 11, 219 a 12, 13. The paraphrase of Them. (50, 18 H., 92, 13 Sp.) has suggested a doubt whether he understood τῇ συνεχείᾳ of the continuance of the race, not of the individual, and, if so, whether he had a different text, e.g. δύναται for ἀδυνατεῖ. His words are: τοῖσι τῷ ἐν γενέσει] γὰρ περιποιῆσαι βούλεται εἰκόνα θεϊότητος καὶ αἰδιότητος ἢ φύσις, καθόσον δύναται. δύναται δὲ τῇ συνεχείᾳ μόνῃ διὰ τὸ μηδὲν ἐνδέχεσθαι τῶν φθαρτῶν ταῦτο καὶ ἐν ἀριθμῷ διαμένειν. It would seem, however, that he is paraphrasing freely and in δύναται δὲ τῇ συνεχείᾳ μόνῃ he may be thinking of δύναται δὲ ταύτῃ μόνον τῇ γενέσει cited above (*note* on a 29) from Plato.

b 6. ταύτῃ. The not very usual addition of the antecedent ταύτῃ after the relative, and in this position after the verb, lends emphasis to the manner of participation. Thus, then, "must this mortal put on immortality." With ἥ δύναται μετέχειν ἕκαστον, κοινωνεῖ ταύτῃ cf. *De Gen. An.* II. 1, 731 b 31 ἐπεὶ γὰρ ἀδύνατος ἡ φύσις τοῦ τοιοῦτου γένους αἰδιός εἶναι, καθ' ὃν ἐνδέχεται τρόπον, κατὰ τοῦτόν ἐστιν αἰδιόν τὸ γινόμενον. ἀριθμῷ μὲν οὖν ἀδύνατον (ἡ γὰρ οὐσία τῶν ὄντων ἐν τῷ καθ' ἕκαστον τοιοῦτον δ' εἴπερ ἦν, αἰδιόν ἂν ἦν), εἶδει δ' ἐνδέχεται. διὸ γένος αἰεὶ ἀνθρώπων καὶ ζώων ἐστὶ καὶ φυτῶν. Unity of the species is maintained, but not the personal identity of its members. The race persists, the individual perishes: which exactly accords with the account given 408 b 18—29.

b 7. ἀλλ' οἷον αὐτό, int. τοιοῦτον as above a 28. ἀριθμῷ μὲν οὐκ ἐν, εἶδει δ' ἐν. For the antithesis cf. *Metaph.* 1016 b 31 ἔτι δὲ τὰ μὲν κατ' ἀριθμὸν ἐστὶν ἐν, τὰ δὲ κατ' εἶδος, τὰ δὲ κατὰ γένος, τὰ δὲ κατ' ἀναλογίαν· ἀριθμῷ μὲν ὃν ἡ ὕλη μία, εἶδει δ' ὃν ὁ λόγος εἷς. Cf. also *supra* 411 b 20 ὡς τὴν αὐτὴν ἔχοντα ψυχὴν τῷ εἶδει, εἰ καὶ μὴ ἀριθμῷ.

**415 b 8—416 a 18.** Soul is the principle and cause of a living body in each of three senses [§ 3]. It is formal cause [§ 4]; it is final cause [§ 5]. That it is also moving cause is evident when we consider that motion includes qualitative change and quantitative change or growth, as well as spatial motion, which is not an attribute of all living things; and further that sensation is a qualitative change, while growth is implied in nutrition, and nutrition is confined to living things [§ 6]. We may remark in passing that Empedocles was mistaken in attributing downward growth to earth and upward growth to fire, the fact being that the roots of plants find their analogues in the heads of animals, not to mention the objection that, if parts of an organism tend in opposite directions, a central principle is needed to keep them together [§ 7]. Another erroneous view makes fire the sole cause of nutrition and growth, whereas it is only a contributory cause, soul itself being the true cause [§ 8].

This remarkable passage is at any rate a digression, as 416 a 18 might follow 415 b 7 without detriment to the argument. It is also strange that the term τροφή occurs only once, towards the end of the passage, 416 a 10, as the proof that growth accompanies life makes no direct mention of the very faculty, the nutritive, which we are ostensibly investigating in this chapter. It is strange too, that, while discussing this faculty, we should come across a quite general proof that soul is the cause of the living body in three senses, a proof equally applicable to all the faculties. One would have thought that such a proof would have been more in place at some point nearer the definition of soul as entelechy, the definition which is assumed in the argument of the passage.

b 8. αἰτία καὶ ἀρχή. For ἀρχή cf. 402 a 6 οἷον ἀρχή, *note*.

b 9. πολλαχῶς. For the three meanings of cause here given see *Metaph.* 983 a 26 τὰ δ' αἰτία λέγεται τετραχῶς, ὃν μίαν μὲν αἰτίαν φαιμέν εἶναι τὴν οὐσίαν καὶ τὸ τί ἦν εἶναι (ἀνάγεται γὰρ τὸ διὰ τί εἰς τὸν λόγον ἔσχατον, αἷτιον δὲ καὶ ἀρχή τὸ διὰ τί πρῶτον), ἐτέραν δὲ τὴν ὕλην καὶ τὸ ὑποκείμενον, τρίτην δὲ ὅθεν ἡ ἀρχὴ τῆς κινήσεως,

τετάρτην δὲ τὴν ἀντικειμένην αἰτίαν ταύτην, τὸ οὐ ἔνεκα καὶ τὰγαθόν (τέλος γὰρ γενέσεως καὶ κινήσεως πάσης τοῦτ' ἐστίν). Cf. *Metaph.* 1013 a 24 sqq., *Phys.* II. 3, especially 194 b 23 sqq. and *ib.* 7, 198 a 14. In all these passages material cause or substratum ranks as a fourth cause distinct from, and contrasted with, the other three. **διωρισμένους.** The reference is perhaps to *Metaph.* 1013 a 24 sqq. cited above.

**b 10. τρεῖς.** The position of *τρεῖς* is no argument against its genuineness, the rule being that, when there are two epithets, it is sufficient that one should go with the article, the other may be placed where you please, as here after the noun. The paraphrase of Them. (50, 26 H., 92, 25 Sp.) is *πλεοναχῶς δὲ λεγομένης τῆς ἀρχῆς καὶ τῆς αἰτίας ὁμοίως ἡ ψυχὴ κατὰ τοὺς διωρισμένους ἐν τοῖς περὶ τῶν ἀρχῶν τρόπους τριχῶς ἐστὶν αἰτία*, which has suggested to Professor H. Jackson the conjecture *τριχῶς* for *τρεῖς*. Them. is however quite within his rights as a judicious interpreter. **ἄθεν ἡ κίνησις αὐτῇ.** "The soul is in itself the origin of motion" as opposed to something which derives from another the motion which it transmits. The accentuation of *codd.* E S *αὐτῇ* seems indefensible, for it would be intolerably harsh to supply *καὶ γὰρ ἄθεν ἡ κίνησις αὐτῇ, καὶ οὐ ἔνεκα*=for soul has the moving cause and the final cause, and then go on in a new sentence with *καὶ ὥς ἡ οὐσία τῶν ἐμψύχων σωμάτων ἡ ψυχὴ αἰτία*=and the soul is the cause of living things in the sense of substance.

**b 12 τὸ γὰρ...14 τοῦτου ἡ ψυχὴ.** In b 14 *τοῦτου*, though it has poor authority (see critical notes), decidedly improves the cogency of the argument. By *τοῦτων*, which has supplanted *τοῦτου* in the vulgate, must be meant *τῶν ζώντων*, cf. 402 a 6 sq. Here we have a new setting of the proof that soul is the formal cause of the living organism. In logical form the proof runs as follows: the essence, or substance, of everything is the cause of its being; the being of living organisms is life; it follows that the essence, or substance, of living organisms is the cause of their life. But the cause of the life (*τοῦτου*=*τοῦ ζῆν*) of living things is soul (cf. 414 a 12 "the soul is that whereby primarily we live"). Therefore soul is the essence, or substance, of the living organism. This statement of the case has decided advantages, when compared with that of 412 a 11—b 5, or 414 a 4—14.

**b 13. τὸ δὲ ζῆν τοῖς ζῶσι τὸ εἶναι ἐστιν.** Waitz, commenting on *Anal. Prior.* II. 21, 67 b 12 *τὸ ἀγαθὸν εἶναι*, has an interesting note on the light thrown by such a sentence as this and by 431 a 19 *τὸ δὲ ἔσχατον εἶν, καὶ μία μεσότης· τὸ δ' εἶναι αὐτῇ πλείω* upon the origin of the construction by which *τὸ εἶναι* with the dative of the predicate does duty for the notion of a thing in the abstract, "substantialis notio." Waitz says: *Brevitas scilicet in dicendo et mutatus verborum ordo obscuritatem fecerunt.* The dative is originally a dative of the possessor, like *τοῖς ζῶσι* here and *αὐτῇ* (431 a 19), but in the stereotyped phrase it is as a rule prefixed to the infinitive, and then it is predicative and seldom recurs as subject. Cf. *Tor.* v. 4, 133 b 33 *ἀλλ' ἄλλο λέγεται τῷ ἑτέρῳ εἶναι αὐτοῖς* [these are *τὸ δ' συμβέβηκε* and *τὸ συμβεβηκὸς μετὰ τοῦ δ' συμβέβηκε λαμβανόμενον*] *τὸ εἶναι· οὐ ταῦτόν γάρ ἐστιν ἀνθρώπων τε τὸ εἶναι ἀνθρώπων καὶ λευκῶ ἀνθρώπων τὸ εἶναι ἀνθρώπων λευκῶ.*

**b 14. ἔτι τοῦ δυνάμει ὄντος λόγος ἡ ἐντελέχεια.** It is to be noted that *λόγος* is one of the terms used for "formal cause" (v. *supra* 403 b 2, 414 a 9, 13 sq.). This elliptical argument fully stated would run thus. Of whatever exists potentially the entelechy is the notion, essence or formal cause. But from its definition in 412 a 27 sq. we have as minor premiss, "But soul is the entelechy of a potential animal or plant"; whence the conclusion, "soul is the formal cause."

b 15. οὐ ἔνεκεν. We might have expected an article before οὐ ἔνεκεν, but the prepositional phrase is virtually a noun and may be construed even without the article as a quasi-genitive with αἰτία; cf. *supra* b 10 ὅθεν ἡ κίνησις αὐτή, καὶ οὐ ἔνεκα: cf. also *Pol.* 1253 b 3 οἰκονομίας δὲ μέρη, ἐξ ὧν πάλιν οἰκία συνέστηκεν where the relative phrase ἐξ ὧν...συνέστηκεν is treated as a noun in the genitive case. See Newman's note *ad loc.*; cf. also *Pol.* 1258 b 27 sqq.

b 17. τοῦτ', int. τὸ οὐ ἔνεκα. τοιοῦτον, int. τέλος or τὸ οὐ ἔνεκα.

b 18. καὶ κατὰ φύσιν. Not only is soul the end, body and bodily parts the mere instruments for the realisation of the end, but nature intended this, it is part of her plan. Caution, however, is needed in the language we use, for φύσις is to A., not an external directing intelligence, but an indwelling principle. Cf. *De Gen. An.* II. 4, 741 a 1 cited in note on 415 a 26 *supra*; also see note on 406 a 14. Cf. *Simpl.* III, 25 sqq. τὰ φυσικὰ σώματα. By this we must (as Philop. reminds us) understand all natural *living* bodies. Cf. 412 a 11—15, where natural bodies are classified as animate and inanimate. In fact σῶμα is slipping into this narrower meaning in 412 b 26—413 a 4, see note on 413 a 2. τῆς ψυχῆς ὄργανα. Cf. 407 b 25, with note on δεῖ γάρ, *Pol.* 1254 a 34 ψυχῆς καὶ σώματος, ὧν τὸ μὲν ἄρχον ἐστὶ φύσει τὸ δ' ἀρχόμενον. This conception of body as soul's instrument is at once the complement and the antithesis of Plato's view in the *Phaedo* 80 A that, when soul and body are united, nature orders the soul to rule and govern and the body to obey and serve.

b 22. οὐ πᾶσι δ'. Cf. 410 b 18 sqq., 413 b 1 sqq. All plants and some animals are without locomotion.

b 23. ἔστι δὲ καὶ ἀλλοίωσις καὶ αὔξις κατὰ ψυχὴν. Qualitative change and growth are due to soul, though they take place in body. They are processes in which both share. Cf. *De Sensu* I, 436 a 6—8 and 436 b 6—8. We note that A. is using the categories (place, quality, quantity) to determine the various kinds of motion (κίνησις) exactly as in 406 a 12 sqq.

b 24. ἡ μὲν γὰρ αἰσθησις ἀλλοίωσις τις. We shall hear more of this in II, c. 5, where the discussion is introduced (416 b 34) by the similar words δοκεῖ γὰρ ἀλλοίωσις τις εἶναι (int. ἡ αἰσθησις).

b 28. οὐ καλῶς εἶρηκε τοῦτο. We may, with Them., understand the error attributed to Empedocles to be the explanation of growth as due to the natural tendencies of the elements assimilated. Plants contain earth and fire, earth makes the roots grow down, because it has a downward tendency, fire has an upward tendency and therefore the branches, which contain fire, grow upwards. The pronoun τοῦτο marks the subject treated. So Wallace "This is a subject in which Empedocles has not expressed himself correctly." Karsten's conjecture προσθέσει for προστιθείς, for which he cites *De Gen. et Corr.* II. 6, 333 a 35 οὐδ' αὔξις ἂν εἴη κατ' Ἐμπεδοκλέα, ἀλλ' ἡ κατὰ πρόσθεσιν, seems unnecessary, even if we grant his premiss "talem αὔξιν Aristoteles πρόσθεσιν vocat." προστιθείς, "when he adds." Presumably A. would accept part of the account given by Empedocles.

416 a 2. λαμβάνει approximates here, as often, e.g. 424 a 17, to ὑπολαμβάνει. Compare what is said *Ind. Ar.* s.vv. 422 b 33 sqq., 799 b 33—45.

a 3. οὐ γὰρ τὸ αὐτὸ...καὶ τῷ παντί, "not the same...as for the whole universe": this καὶ should be taken closely with τὸ αὐτό. A. believed the whole physical universe to be spherical in shape, having a centre and circumference; rectilinear motion from the centre towards the circumference is upward movement and that from the circumference towards the centre is downward. Cf. 406 a 27—30, *De Caelo* IV. 1, 308 a 13—31, where A. defines his own view in opposition to that of Plato, who in the *Timaeus* (63 B sqq.) denied that there was

up or down in the universe: also *Phys.* IV. 1, 208 b 8—14. As applied to an animal or a plant, however, the words "up" and "down" are used in a purely conventional sense: *ib.* 208 b 14 ἔστι δὲ τὰ τοιαῦτα οὐ μόνον πρὸς ἡμᾶς, τὸ ἄνω καὶ κάτω καὶ δεξιὸν καὶ ἀριστερόν· ἡμῖν μὲν γὰρ οὐκ αἰεὶ τὸ αὐτό, ἀλλὰ κατὰ τὴν θέσιν, ὅπως ἂν στραφῶμεν, γίνεται... b 18 ἐν δὲ τῇ φύσει διώριστα χωρὶς ἕκαστον. οὐ γὰρ ὁ τι ἐτυχέν ἐστι τὸ ἄνω, ἀλλ' ὅπου φέρεται τὸ πῦρ καὶ τὸ κοῦφον· ὁμοίως δὲ καὶ τὸ κάτω οὐχ ὁ τι ἐτυχεν, ἀλλ' ὅπου τὰ ἔχοντα βάρος καὶ τὰ γεγρά. The part where the mouth, or whatever organ receives food, is found is regarded as the upper part and the rest, in contradistinction, as the lower part. Cf. *De Incessu An.* 4, 705 a 32—b 1, *De Iuv. et Sen.* 1, 468 a 1 καθ' ὃ μὲν γὰρ εἰσέρχεται μόριον ἢ τροφή, ἄνω καλοῦμεν, πρὸς αὐτὸ βλέποντες ἀλλ' οὐ πρὸς τὸ περιέχον ὄλον, κάτω δὲ καθ' ὃ τὸ περιττώμα ἀφίησι τὸ πρῶτον. ἔχει δ' ἐναντίως τοῖς φυτοῖς τοῦτο καὶ τοῖς ζῴοις, *Hist. An.* II. 1, 500 b 28 λέγομεν δὲ ἄνω τὸ ἀπὸ κεφαλῆς μέχρι τοῦ μορίου ἢ ἢ τοῦ περιττώματος ἐστὶν ἕξοδος, κάτω δὲ τὸ ἀπὸ τούτου λοιπόν. The similarity of function between the roots of plants and the mouths of animals led to the remark frequently made (see next note) that plants are placed in the earth upside down; see *De Iuv.* loc. cit. and *De Part. An.* IV. 7, 683 b 18.

a 4. ὡς ἡ κεφαλὴ. See *De Part. An.* IV. 10, 686 b 31 μικρὸν δ' οὕτω προβαίνοντα καὶ τὴν ἀρχὴν ἔχουσι κάτω, καὶ τὸ κατὰ τὴν κεφαλὴν μόριον τέλος ἀκίνητόν ἐστι καὶ ἀναίσθητον, καὶ γίνεται φυτόν, ἔχον τὰ μὲν ἄνω κάτω, τὰ δὲ κάτω ἄνω; also *De Incessu An.* 4, 705 a 29. The degradation of animal to plant, or rather the position of the plant in the scale of organic being, is thus described, "it is rooted to the ground, and the upper part of it, which corresponds to the head of animals, is turned downwards." A's criticism assumes that the head contains fire, if anything does, for it grows upwards, and therefore the roots of plants ought to grow upwards upon the theory of Empedocles.

a 5. τοῖς ἔργοις. The functions are the standard by which the identity or difference of the instruments is determined. See note on 412 b 18, ἐπὶ τῶν μερῶν. This principle is enforced and expounded throughout the *De Part. An.*, a treatise by which A. founded the science of comparative morphology.

a 6. τί τὸ συνέχον. Cf. 411 b 5—14 and notes.

a 8. τοῦτ' ἐστὶν ἡ ψυχὴ. Cf. *supra* 415 b 23 ἔστι δὲ καὶ ἀλλοίωσις καὶ αὔξησης κατὰ ψυχὴν. Whether Empedocles really thus ignored this unifying function of soul is extremely doubtful. Theophrastus follows A. in emphasising the unity of the vegetative principle in plants: Theoph. *De Caus. Plant.* I. 12, § 5 ἐν γὰρ τι τὸ γεννῶν, οὐχ ὥσπερ Ἐμπεδοκλῆς διαιρεῖ καὶ μερίζει, τὴν μὲν γῆν εἰς τὰς ῥίζας, τὸν δ' αἰθέρα εἰς τοὺς βλαστοὺς ὡς ἐκάτερον ἐκατέρου χωρίζομενον, ἀλλ' ἐκ μιᾶς ὕλης καὶ ὑφ' ἐνὸς αἰτίου γεννῶντος. αἷτιον... 9 τρέφεσθαι. And so αἷτιον τοῦ ζῆν: cf. 415 b 12—14. For the plant to live is simply to grow and to be nourished.

a 9. δοκεῖ δὲ τισιν: Heraclitus and (according to Simpl.) Hippasus. The doctrine of vital heat passed from Heraclitus to the Stoics: cf. Cic. *De Nat. Deor.* II. §§ 23—30, 57, 58, especially § 27; *Iam vero reliqua quarta pars mundi, ea et ipsa tota natura fervida est et ceteris naturis omnibus salutarem impertit et vitalem calorem.*

a 11 μόνον... 12 καὶ αὔξομενον, i.e. the only one which in its elemental state and before it is compounded in τὰ μεικτὰ admits of nutrition and growth. ἡ is corrective, "I mean."

a 13. τὸ δὲ συναίτιον μὲν πῶς ἐστίν, οὐ μὴν ἀπλῶς γε αἷτιον. Cf. for τὸ 408 b 5. This is one of many instances in A. where μὲν is answered by οὐ μὴν or οὐ μὴν... γε, these latter particles replacing the more common οὐδέ, either because οὐδέ in the second clause would be ambiguous or for some other reason of convenience; cf. 424 a 26 μέγεθος μὲν γὰρ ἂν τι εἴη τὸ αἰσθανόμενον· οὐ μὴν τό γε αἰσθητικῶ εἶναι

οὐδ' ἡ αἰσθησις μέγεθος ἐστίν, and 429 b 8 ἔστι μὲν καὶ τότε δυνάμει πως, οὐ μὴν ὁμοίως καὶ πρὶν μαθεῖν ἢ εὐρεῖν. Cf. also *Elh. Nic.* 1173 b 26 αἱ μὲν ἡδοναὶ αἰρεταὶ εἰσιν, οὐ μὴν ἀπὸ γε τούτων, ὥσπερ καὶ τὸ πλουτεῖν, προδόντι δ' οὐ, καὶ τὸ ὑγιαίνειν, οὐ μὴν ὅτιοῦν φαρόντι. The antithesis between συναίτιον and αἴτιον ἀπλῶς comes to A. from Plato; cf. *Phaedo* 99 b ὅτι ἄλλο μὲν τί ἐστὶ τὸ αἴτιον τῷ ὄντι, ἄλλο δ' ἐκείνο, ἄνευ οὗ τὸ αἴτιον οὐκ ἂν ποτ' εἴη αἴτιον: see also *Tim.* 46 D. By a "joint cause" or concurrent cause (*causa adiuvans*) is meant a necessary condition, hence in *Metaph.* Δ, c. 5, a chapter which deals with various meanings of the term "necessary," we find συναίτιον used to explain the necessary condition or οὐ ἄνευ οὐκ as it is often termed: 1015 a 20 ἀναγκαῖον λέγεται, οὐ ἄνευ οὐκ ἐνδέχεται ζῆν ὡς συναίτιον, οἷον τὸ ἀναπνεῖν καὶ ἡ τροφή τῷ ζῳῷ ἀναγκαῖον· ἀδύνατον γὰρ ἄνευ τούτων εἶναι. So, too, τροφή is explained as a necessary condition of life or subsistence in *De Part. An.* I. 1, 642 a 7 λέγομεν γὰρ τὴν τροφήν ἀναγκαῖον τι κατ' οὐδέτερον τούτων τῶν τρόπων, ἀλλ' ὅτι οὐχ οἷον τ' ἄνευ ταύτης εἶναι. τοῦτο δ' ἐστὶν ὥσπερ ἐξ ὑποθέσεως· ὥσπερ γὰρ ἐπεὶ δεῖ σχίζειν τῷ πελέκει, ἀνάγκη σκληρὸν εἶναι, εἰ δὲ σκληρὸν, χαλκοῦν ἢ σιδηροῦν, οὕτω καὶ ἐπεὶ τὸ σῶμα ὄργανον... ἀνάγκη ἄρα τοιοῦνδ' εἶναι καὶ ἐκ τοιοῦνδ', κτέ. The necessary condition is thus subsumed under the material cause.

**416 a 19—b 11.** In attempting to determine the nature of nutriment we are met by a difficulty. Some maintain that a thing is fed by its opposite, with the qualification that this holds not of all contraries but only of those which being quantities admit of increase, as do the elements [§ 9]. Others maintain that feeding, like growth, is a matter of addition and therefore that like is fed by like. The advocates of the former view object that like is impassive to like, for change will be to an intermediate state, when it is not to a contrary, and food in digestion undergoes a change. Further they urge that that which is nourished is not affected by the nutriment as the nutriment is affected and changed in the process of nutrition, appealing to the example of the craftsman and his material: if he is said to be affected by his material, what is meant is only that he changes from inactivity to activity [§ 10]. The truth is that all depends on what precisely is meant by "nutriment." Is it the food in its original state, bread, meat, etc.? Or is it that food after digestion? If the former, then it is true that "contrary is nourished by contrary"; if the latter, then "like is nourished by like." Thus, as the terms may reasonably be used in either way, both views of nutrition are, in a sense, correct [§ 11]. However, it must be remembered that nutriment, as such, of the living organism, is relative to the animate being [§ 12].

The main positions are admirably summarised in *Phys.* VIII. 7, 260 a 29 ἀδύνατον γὰρ αὐξῆσιν εἶναι ἀλλοιώσεως μὴ προϋπαρχούσης· τὸ γὰρ αὐξανόμενον ἔστι μὲν ὡς ὁμοίᾳ αὐξάνεται, ἔστι δ' ὡς ἀνομοίᾳ· τροφή γὰρ λέγεται τῷ ἐναντίῳ τὸ ἐναντίον. προσγίνεται δὲ πᾶν γινόμενον ὁμοιον ὁμοίᾳ. ἀνάγκη οὖν ἀλλοίωσιν εἶναι τὴν εἰς τὰναντία μεταβολήν. ἀλλὰ μὴν εἴ γε ἀλλοιούται, δεῖ τι εἶναι τὸ ἀλλοιοῦν καὶ ποιοῦν ἐκ τοῦ δυνάμει θερμοῦ τὸ ἐνεργείᾳ θερμόν.

a 20. περὶ τροφῆς. Here we resume the main subject interrupted by the digression of §§ 3—8. Generation (γέννησις) having been dismissed at the end of § 2, 415 b 7, nutrition remains to be discussed.

a 21. τῷ ἔργῳ τούτῳ, the function of nutrition. δοκεῖ. This was a current opinion, but, as we see below, the opposite view also found support.

a 22. οὐ πᾶν δὲ παντί, int. τροφή ἐστὶ: white and black, for example, as well as health and sickness, would be exceptions.

a 23. γένεσιν ἐξ ἀλλήλων ἔχουσιν, i. q. a 24 γίνεται ἐξ ἀλλήλων. So ἔχειν διαφορὰν = διαφέρειν 416 b 4.

a 24. οὐ πάντα ποσά, int. ἐστι. Not all contraries are "quanta," and unless they are, they are incapable of increase.

a 25. οὐδ' ἐκείνα. By ἐκείνα are meant, not health and sickness, but the contraries which are supposed to derive growth from each other: a 24 γίνεται γὰρ... 25 κάμνοντος are parenthetical. τὸν αὐτὸν τρόπον. The relation is not reciprocal. A may be τροφή to B (as oil to fire) without B being similarly (τὸν αὐτὸν τρόπον) τροφή to A.

a 26. ἀλλὰ τὸ μὲν ὕδωρ τῷ πυρὶ τροφή. Cf. *Metaph.* 983 b 22 λαβὼν ὥσως τὴν ὑπόληψιν ταύτην ἐκ τοῦ πάντων ὁρᾶν τὴν τροφήν ὑγρὰν οὖσαν καὶ αὐτὸ τὸ θερμὸν ἐκ τούτου γιγνόμενον καὶ τούτῳ ζῶν. Here τὸ θερμὸν is nurtured by the water, but in other passages there is the same reference to water as nourishing, not animal heat as one is inclined to interpret it, but fire. *Mag. Mor.* II. 1210 a 16 καὶ γὰρ εἰ θέλεις τὰ ἐναντιώτατα ποιῆσαι πῦρ καὶ ὕδωρ, ταῦτα ἀλλήλοις χρήσιμά εἰσιν. τὸ γὰρ πῦρ φασίν, ἐάν μὴ ἔχῃ ὑγρόν, φθείρεσθαι, ὡς τοῦτ' αὐτῷ παρασκευάζον ὥσπερ τροφήν τινα, ταύτην δὲ τοσαύτην, ὅσης κρατήσκειν <ἄν>. ἂν μὲν γὰρ πλείον ποιήσῃς τὸ ὑγρόν, ἐπικρατήσῃς <ποιήσῃ> φθείρεσθαι τὸ πῦρ, ἐὰν δὲ σύμμετρον, συνοίσει. Them. (51, 35 H., 95, 1 Sp.) refers to oil as a compound of water and air, both liquids. But Professor H. Jackson suggests that A. is thinking of how to keep a wood fire alight; you need some olive wood, not altogether dry. Philoponus (282, 9—11) says thoroughly dry wood will not keep a fire burning, any more than ashes.

a 27. ἐν μὲν οὖν τοῖς ἀπλοῖς. The particles μὲν οὖν are resumptive. The simple bodies are the four elements. It is implied that they are called "quanta" (ποσά), and the view that contrary is nutriment to contrary is more obviously true of them than of compounds. It may well be that A. is thinking primarily of the growth of tissues, which, relatively to the organs which they go to form, are simple. See note on 408 a 11. As the growth of organs is due to the growth of tissue, so the growth of tissue is due to the increase of the elements.

a 28. ταῦτ', i.e. the pair of correlative opposites. This is expanded into τὸ μὲν... τὸ δέ, one of the opposites being nourishment, the other that which is nourished.

a 30. τὸ ὅμοιον τῷ ὁμοίῳ. Empedocles attributed nourishment to the attraction of like for like. Sweet, bitter, acid and hot unite with what is kindred to them in animal or plant: *frag.* 62, 6; 90, 1 sq. D (253, 268 sq. K), *Aet. Plac.* v. 27 (*Doxogr. Gr.* p. 440, 4) Ἐμπεδοκλῆς τρέφεσθαι μὲν τὰ ζῷα διὰ τὴν ὑπόστασιν τοῦ οἰκείου. This was also the view of Democritus, if he included nutrition in his general view of action and passivity (cf. *De Gen. et Corr.* I. 7, 323 b 3 sqq.). While the majority agree in thinking that like is wholly unaffected by like, Democritus, A. there says, stood alone (παρὰ τοὺς ἄλλους ἰδίως ἔλεξε μόνος) in holding that what acts and what is acted upon are like and the same, for if two things are different and distinct, it is impossible that one should be acted upon by the other. καθάπερ καὶ αὐξάνεσθαι. No other argument is cited in support of the "like by like" view of nutrition. Its supporters would dwell upon the fact of increase in bulk, the presumption being that the added tissue is of similar nature.

a 31. ὥσπερ εἵπομεν, *supra* 416 a 21.

a 32. ὡς ἀπαθοὺς ὄντος. The view of Empedocles 410 a 23 (see note) and of Anaxagoras, who consistently extended it to knowledge and perception, as one particular case of action and being acted upon. See notes on 405 b 14, 15.

a 33. μεταβάλλειν. The verb is intransitive, as often. ἡ δὲ μεταβολή. Cf. *Metaph.* 1069 b 3 ἡ δ' αἰσθητὴ οὐσία μεταβλητή. εἰ δ' ἡ μεταβολὴ ἐκ τῶν ἀντικει-



μένων ἢ τῶν μεταξύ, ἀντικειμένων δὲ μὴ πάντων (οὐ λευκὸν γὰρ καὶ ἡ φωνή) ἀλλ' ἐκ τοῦ ἐναντίου, ἀνάγκη ὑπεῖναι τι τὸ μεταβάλλον εἰς τὴν ἐναντίωσιν· οὐ γὰρ τὰ ἐναντία μεταβάλλει, where the clause introduced by εἰ expresses A.'s own view. By change A. means motion in the widest sense, affecting the category of substance as well as those of quality, quantity and place. See *notes* on 405 b 31 and 406 a 12, τεσσάρων.

416 b 3. τὸ τελευταῖον προσγινόμενον, "the final thing added," that is, the thing added in its final state; cf. the use of *τελευταία* and *προσεχῆς* as epithets of ὕλη, when applied to the proximate matter as contrasted with matter in its primary state of pure potentiality (πρώτη ὕλη): *Metaph.* 1070 a 20 ἅπαντα γὰρ ὕλη ἐστὶ, καὶ τῆς μάλιστα οὐσίας ἡ τελευταία [int. ὕλη].

b 4. εἰ δ' ἄμφω, i.e. εἰ ἄμφω ἐστὶν ἡ τροφή. ἡ μὲν ἄπεπτος ἡ δὲ πεπεμένη. The former is πρώτη τροφή, the latter τελευταία.

b 8. ὁρθῶς καὶ οὐκ ὁρθῶς. So 417 a 18 sq., *De Gen. et Corr.* I. 5, 322 a 3 ἐστὶ μὲν γὰρ ὡς τὸ ὁμοιον ὁμοίῳ αὐξάνεται, ἐστὶ δ' ὡς ἀνομοίῳ. The formula recurs in a different connexion, 426 a 22 sq.

b 9. οὐθὲν τρέφεται μὴ μετέχον ζωῆς. Cf. *note* on 413 a 29. It follows from this that it is only in a figurative sense that fire can be said to be fed with fuel.

b 11. καὶ οὐ κατὰ συμβεβηκός. An animal is nourished *quā* living, not *quā* white or black, nor in virtue of any other non-essential qualities that it may possess, just as a servant is properly and essentially the servant of a master and not, except incidentally, the servant of a white man, an old man, a grammarian, or indeed a man at all. Cf. *Them.* 52, 31 sqq. *H.*, 96, 19 sqq. *Sp.*, *Simpl.* 114, 36 sqq., *Philop.* 285, 6—18.

416 b 11—31. The two notions of nutrition and growth can be thus distinguished. Growth is a quantitative conception. Nutrition is of the animal or plant regarded as a concrete individual thing; for it is nourishment which preserves it in being [§ 13]. And thus we have determined the function and the correlative object of the nutritive faculty [§ 14]. The end which this nutritive or rudimentary soul subserves is the propagation of the species and it may therefore be called the generative soul [§ 15]. In the nourishment of the animal or plant the soul makes use of (a) internal heat, (b) food, just as in steering a boat the steersman uses (a) his hand and (b) the rudder. The internal heat is necessary for the digestion and assimilation of food [§ 16].

b 12. τροφή, int. εἶναι, which is expressed with the second dative (αὐξητικῷ) only, as in *Metaph.* 1043 b 2 sq. In 408 a 25 sq. and 413 b 29 it is expressed with the first dative and not with the second.

b 12. αὐξητικῷ εἶναι. Cf. *supra* 412 b 13. For the relation of these two notions compared see *De Gen. et Corr.* I. 5, 322 a 25 καὶ ἡ τροφή τῇ αὐξήσει τὸ αὐτὸ μὲν, τὸ δ' εἶναι ἄλλο. ἡ μὲν γὰρ ἐστὶ τὸ προσὶδν δυνάμει ποσὴ σὰρξ, ταύτῃ μὲν αὐξητικὸν σαρκός, ἡ δὲ μόνον δυνάμει σὰρξ, τροφή. For the omission of the article τὸ with the infinitive see *note* on 413 b 29. ἡ μὲν γὰρ...13 αὐξητικόν. The subject of 13 αὐξητικόν (as of τροφή) is left unexpressed, the construction being emphatically *ad sensum*: it must be the food assimilated. In so far as this maintains the bodily structure by repairing waste and conducing to vital functions, it is said merely to nourish it, and this it will do in old age, when the bulk of the body is shrinking instead of increasing; in so far as it increases the bulk and volume of the body, as happens in the years of growth, it is not only τροφή but αὐξητικόν. Not only is the animal economy maintained, but there is a surplus which, as we say, builds it up and adds to its bulk. Cf. the similar passage *De Gen. et Corr.* I. 5, 322 a 16—33.

b 13. *τόδε τι καὶ οὐσία*. For *οὐσία* in the sense of *τόδε τι* (*καὶ* being explicative) see 412 a 7 and *note*.

b 15. *καὶ γενέσεως ποιητικόν*. Cf. Them. (53, 4 H., 97, 3 Sp.) *ὅταν δὲ ἤδη εἰς ἀκμὴν ἔλθῃ τὸ ἐμφυχον σῶμα, τοῦ μὲν αἵξειν παύεται ἢ τροφή, τοῦ τρέφειν δὲ οὐδαμῶς, ἀλλ' ἤδη ποιεῖ καὶ γεννητικόν [τοῦ ὁμοίου γάρ]*. τὸ γὰρ σπέρμα περίττωμα ἦν τῆς ἐσχάτης τροφῆς [i.e. the blood or its analogue. Cf. *De Gen. An.* I., cc. 17—20, especially 726 b 1—11] *γίνεται οὖν τῆνικαῦτα καὶ γενέσεως αἰτία τροφή*. The intimate relation between nutrition and reproduction and the diversion of superfluous nourishment to the development of new individuals is most clearly seen in the lowest forms of life. Barco, p. 20, *note*, cites Dante (*Purg.* xxv. 37) and supposes the poet indebted to the commentary of Thomas Aquinas on this passage. *ἀλλ' οἷον τὸ τρεφόμενον*, int. *ἀλλὰ τοιούτου οἷον ἐστὶ τὸ τρεφόμενον*. Cf. 415 a 28, b 7 and 416 b 25 *infra*.

b 17. *ἡ μὲν τοιαύτη τῆς ψυχῆς ἀρχή*, i.e. the nutritive principle or faculty as above defined: the possessive genitive (as with *δύναμις* or *μόριον*).

b 18. *τὸ ἔχον αὐτήν*, i.e. *τὸ ἔχον τὴν τοιαύτην...ἀρχήν*. By *τὸ ἔχον* is meant b 9 *τὸ ἐμφυχον σῶμα ἢ ἐμφυχον* (cf. b 11—13), or *τὸ ἐμφυχον ζῶον*. See *note* on 403 a 4. By *ἡ τοιοῦτον* I understand *ἡ τόδε τι καὶ οὐσία* (b 13). The *θρεπτικὴ δύναμις* maintains its possessor in existence as *τόδε τι καὶ οὐσία* all through life, whether its growth is increased as in youth, or diminished as in age, as a numerical unity through all the changes of material assimilated. Trend.<sup>2</sup>: *Nutriendo id subest, ut corporis particulae et pereant et nascantur novae. Non igitur corpus servatur unum et idem numero, sed genere et natura*. It seems to me that, if *ἡ τοιοῦτον* meant simply *ἡ ἔχον αὐτήν*, the functions of nutrition and growth would be confused.

b 19. *ἐνεργεῖν*, i.e. to be an active and operative organism, as contrasted with one which is dormant.

b 21. *ἡ πρώτη ψυχή*. Not the first soul as of several, but the rudimentary soul, soul at its lowest stage, that is to say, the nutritive principle.

b 22. *τὸ ἔχον ταύτην σῶμα*. Cf. *supra* b 18.

b 23. *ἐπεὶ δὲ ἀπὸ τοῦ τέλους*. Torstrik advocated the transposition of the sentence *ἐπεὶ δὲ...25 οἷον αὐτὸ* to follow *δύναται εἶναι* of b 20. By so doing he makes the reference of *ἐστὶ δὲ ᾧ τρέφεται διττόν* to b 22 *ᾧ δὲ τρέφεται, ἢ τροφή* more direct and perspicuous. See, however, *note* on 414 b 10. As there, so here, the sequence of thought is momentarily interrupted.

b 24. *τέλος δὲ*, int. *τῆς πρώτης ψυχῆς*.

b 25. *γεννητικὴ οἷον*, int. *γεννητικὴ τοιούτου οἷον*.

b 26. *διττόν*. This statement is apparently intended as an amendment of the previous account. Not only nutriment, but vital heat, has a title to be called the means or instrument of nutrition (*ᾧ τρέφεται*). *ὥσπερ καὶ ᾧ κυβερνᾷ*. The illustration is perfectly clear. The steersman guides the ship with the rudder, but he sets the rudder in motion with his hand. The rudder is a part of the ship and is merely set in motion (for no account is or need be taken of the displacement of the water or of the motion of the ship, which would be due to wind). The hand which moves the rudder is itself moved by the steersman. Thus the steersman is himself the source of motion, the prime movent of the system, and as such relatively, though not absolutely, unmoved. This is quite in accordance with A.'s theory of motion, in order to account for which he postulates, as we shall be told in 433 b 13—15, (1) a prime movent, itself unmoved, (2) an agent for the transmission of motion, moved by the prime movent and in turn setting in motion (3) the instrument proper, which is merely moved and is not a cause of motion.

b 27. τὸ μὲν κινοῦν καὶ κινούμενον, τὸ δὲ κινούμενον <μόνον>. Thanks to the commentary of Philop., the application of the example is also clear. Like the hand of the pilot, the vital heat (τὸ ἔμφυτον θερμὸν Them., Philop.) is the intermediary in nutrition, itself set in motion by the nutritive soul and in turn acting upon the food (τροφή): while the latter, like the rudder in the illustration, is merely passive, undergoing transmutation in the process of digestion. The ancient commentators from Alex. Aphr. downwards, with the single exception of Philop., were misled by the erroneous reading κινοῦν, presented by all our MSS. except E. With misplaced ingenuity Alexander endeavoured to get a good sense out of his text by making the nutritive faculty itself answer to the pilot's hand and the vital heat to the rudder, both being instruments. The nutritive faculty, though movent, is itself unmoved, the vital heat has the intermediary position, moving and moved, which is correct enough, but food is ousted from being an instrument of nutrition at all, which flatly contradicts A.'s explicit statement in 416 b 22 sq. Alex. Aphr., foreseeing this, sets out by boldly denying that either of the two meanings of  $\phi$  τρέφεται in 416 b 25 applies to food. The words of Philop. (288, 5) are λέγει δὲ ὁ Ἀλέξανδρος καὶ ἄλλην ἐξηγήσιν· τὸ γὰρ  $\phi$  τρέφει τὸ διττὸν οὐκ ἐπὶ τῆς τροφῆς ληπτέον, φησί, νῦν, ἀλλὰ διττὸν λέγει τὴν θρεπτικὴν ψυχὴν καὶ τὸ ἔμφυτον θερμὸν, ὃν τὸ μὲν ἔστιν ἀκίνητον ἢ θρεπτικὴ δύναμις (αὕτη γὰρ οὐ κινουμένη κινεῖ), τὸ δὲ ἔμφυτον θερμὸν κινοῦν καὶ κινούμενον· κινεῖ μὲν γὰρ τὴν τροφήν, κινεῖται δὲ ὑπὸ τῆς δυνάμεως. ἡ δὲ ἐξηγησις αὕτη ἀρμόζει ἂν πρὸς γραφὴν τὴν φερομένην οὕτως τὸ μὲν κινῶν καὶ κινούμενον, τὸ δὲ κινῶν μόνον, δηλονότι αὐτὸ μὴ κινούμενον. Them. (53, 26 sqq. H., 98, 5 sqq. Sp.) in the main agrees with Alexander. Simpl. (115, 30 sqq.) scruples to regard the nutritive soul as one of the instruments of nutrition ( $\phi$  τρέφεται) and rightly makes food and vital heat the two things signified (διττὸν). But, with the false reading κινοῦν before him, he is driven to reverse the rightful relation of these instruments as media, making vital heat τὸ κινῶν and food τὸ κινούμενον. Vital heat acts upon food, but food does not react upon vital heat, which is therefore in this sense only, but not absolutely, κινῶν μόνον. In the process of digestion vital heat takes an active part, food a passive part; yet, in so far as it acts upon the body by increasing its bulk, even food is movent as well as moved. Cf. Zeller in *Archiv f. d. Gesch. d. Ph.* IX., p. 537 sq.

b 28. ἐργάζεται δὲ τὴν πέψιν τὸ θερμόν. Cf. *De Gen. An.* II. 4, 740 b 26 sq., *De Part. An.* II. 7, 652 b 9 τούτου δ' αἴτιον ὅτι τοῖς τῆς ψυχῆς ἔργοις ὑπηρετικώτατον τῶν σωμάτων τὸ θερμὸν ἔστιν: cf. also *De Resp.* 21, 480 a 16; 18, 479 a 29.

b 31. ἐν τοῖς οἰκείοις. A. would seem to have written a separate treatise περὶ αὐξήσεως καὶ τροφῆς (or simply περὶ τροφῆς), to judge by the citation in *De Somno* 3, 456 b 2 τῆς μὲν οὖν θύραθεν τροφῆς εἰσιούσης εἰς τοὺς δεκτικούς τόπους γίνεται ἢ ἀναθυμίασις εἰς τὰς φλέβας, ἐκεῖ δὲ μεταβάλλουσα ἐξαιματοῦται καὶ πορεύεται ἐπὶ τὴν ἀρχήν. εἰρηται δὲ περὶ τούτων ἐν τοῖς περὶ τροφῆς. But all trace of this treatise is lost. See Trend., p. 131, *Ind. Ar.* 104 b 16—28.

## CHAPTER V.

With c. 4 we take leave of nutritive soul. The next higher stage is the faculty of sense, which is the main subject from this point right on to Book III., c. 2, the discussion of φαντασία in III., c. 3 being a sort of appendix to it.

At first sight we seem to make little progress in this chapter by the barren discussion of the terms "potential" and "actual," applied in turn to αἰσθητικόν, αἰσθάνεσθαι and αἴσθησις. In reality the questions are of far-reaching import

and materially affect our conception of sense, and consequently of thought. When we call sensation an affection, *πάθος*, or a movement, *κίνησις*, we must always remember that the affection and the movement belong to the composite substance of the individual percipient and are shared in by body and soul. Affections and movements of the body present no difficulty, but what do these terms mean when applied to the soul? Consider the analogous case of acquiring knowledge. There we find one transition from sheer ignorance by learning, and another from the possession to the exercise of knowledge already acquired, and these are mental changes. Sensation implies similar transitions, and, when these are regarded abstractly, apart from the bodily processes accompanying them, the real nature of such changes or transitions becomes clear. They are no alterations for the worse, impairing and destroying; they tend to preserve, develop and perfect the sentient being, which is thus enabled to realise itself in act. In short, sensation is *alteratio non corruptiva, sed perfectiva*, an *ἐνέργεια*, and not properly speaking an *ἀλλοίωσις* or *κίνησις*, though the use of these terms in reference to it can hardly be avoided. What this means for sensation will not be fully realised until we reach II., c. 12 and III., c. 2, more especially 426 b 8—427 b 16. The present chapter forms the subject of a valuable essay by Alex. Aphr. in *ἀπ. καὶ λύσ.* III. 3, pp. 82—86.

**416 b 32—417 a 14.** To come to sense-perception in general. It consists in being acted upon or moved. For, as already remarked, a sensation is a certain change of quality or alteration [§ 1]. It may be asked why external objects are indispensable to sense-perception and why there is no sensation of the senses, i.e. the sense-organs, themselves, if earth, water and the other elements of external things are actually present in our sense-organs. We reply that the perceptive faculty exists potentially and not actually. Take as an example fuel, which will not burn of itself, but needs something to make it burn. Similarly the faculty of sense needs external objects to stimulate it into activity. We must distinguish two meanings of (*a*) perceiving and therefore of (*b*) perception, according as they are potentially so or actually so [§ 2].

**416 b 32. κοινῇ.** A general survey of sense introductory to the separate treatment of the several senses in cc. 7—11.

**b 33. ἐν τῷ κινεῖσθαι τε καὶ πάσχειν.** Cf. 434 b 28 sq.

**b 34. καθάπερ εἴρηται,** i.e. *supra* 415 b 24 ἡ μὲν γὰρ αἴσθησις ἀλλοιώσις τις εἶναι δοκεῖ: cf. 410 a 25.

**b 35. φασὶ δέ τινες.** Democritus and Empedocles, although the latter is inconsistent; see *notes* on 405 b 15, 410 a 23 sqq., 416 a 30.

**417 a 1. ἐν τοῖς καθόλου λόγοις,** that is, *De Gen. et Corr.* I. 7, 323 b 18 sqq.: see the citation in *note* on 407 b 19, also *notes* on 405 b 14, 410 a 23. A reference in the same form occurs in *De Gen. An.* IV. 3, 768 b 23 ἐν τοῖς περὶ τοῦ ποιεῖν καὶ πάσχειν διωρισμένοις.

**a 2. ἔχει δ' ἀπορίαν.** Our problem is this. If sense is a faculty of apprehending sensibles, and the sense-organs themselves are sensibles, how is it that sense does not have perception of its own organs quite apart from the presence of any external objects, especially as these sense-organs consist of the elements, which are objects of sense? The solution (which we will here anticipate) is to the effect that the sense-faculty has only a potential existence, and, like everything which exists potentially, is called into actuality by something else which already has actual existence; in this case, the external object. This problem is not, as at first sight might appear, altogether without a bearing upon the theory of sense-perception as modification or qualitative change (*ἀλλοίωσις*). For, if the faculty of sense is potentially what the sensible object is actually, and if the

presence of the sensible calls the faculty into proper actual existence, this change may fitly be described as an action of the object upon a passive faculty, and so justifies the remark that sense-perception consists in being moved, that is, in being acted upon. But we shall see that the action of the external on the passive faculty is not the last word or the final account of the matter.

a 3. τῶν αἰσθήσεων, i.e. the sense-organs, usually called αἰσθητήρια. A. is generally careful to distinguish the two, but sometimes, especially in the plural, the one word (αἰσθησις) is used in place of the other, as with the English "sense," "senses." Cf. *De Part. An.* IV. 10, 686 a 8 ἐξέθετο δ' ἡ φύσις ἐν αὐτῇ καὶ τῶν αἰσθήσεων ἐνίας, *De Sensu* 3, 440 a 19, *Prob.* XXXI. 12, 958 b 16. Similarly ὄψις, ἀκοή, ὄσφρησις are used for eye, ear and nostril respectively, e.g. 423 b 18, and probably γεῦσις for the tongue 422 a 31, 33. Cf. 435 b 2, *note* on τοῦτο τὸ αἰσθητήριον. καὶ διὰ τῶν: καὶ explicative, "or, in other words, why."

a 4. οὐ ποιοῦσιν. The subject to the verb is αἱ αἰσθήσεις, the "sense-organs." The sense-organs, e.g. the eyes, are compounded of the elements, and these elements and their properties are perceived by sense. The qualification "or their properties" is introduced because sometimes the element itself (e.g. air) cannot be directly perceived, but only its qualities (e.g. temperature and perhaps transparency, τὸ διαφανές). ποιοῦσιν αἰσθῆσιν, produce actual sensation as objects perceived. *Ind. Ar.* 20 b 55 ποιεῖν τὴν αἴσθησιν et τὰ αἰσθητήρια et τὰ αἰσθητὰ dicuntur. But, apart from the present instance where the sense-organs are *ex hypothesi* αἰσθητὰ, I do not remember any passage in *De A.* in which ποιεῖν αἴσθησιν is used of a sense-organ. Bonitz himself cites *De Part. An.* IV. 11, 690 b 30 ἡ μὲν γὰρ γλῶττα τῶν χυμῶν ποιεῖ τὴν αἴσθησιν. See *note* on 419 a 26.

a 5. καθ' αὐτὰ ἢ τὰ συμβεβηκότα τούτοις. We must understand κατὰ to govern τὰ συμβεβηκότα. As explained in the *notes* on 406 a 4, 5, the element in itself is opposed to its accidents. As from II., c. 6 it appears that qualities or attributes are αἰσθητὰ proper, we must interpret perception of the elements in themselves to mean perception of their essential qualities and refer τὰ συμβεβηκότα τούτοις to the non-essential or properly accidental qualities. The former, hot, cold, dry, moist, are perceived by touch (cf. 414 b 8 sq., 423 b 27 sq.), the latter, colour, sound, odour, by the other senses: *Philop.* 295, 3—8, *Simpl.* 118, 23 τῶν γὰρ στοιχείων ἐστὶν ἡ αἴσθησις ἢ κατὰ τὰ καθ' αὐτοὺς ὑπάρχοντα ἢ κατὰ τὰ ἄλλως αὐτοῖς συμβεβηκότα. καὶ γὰρ τῆς ἀντιτυπίας αἰσθανόμεθα τῆς γῆς καθ' αὐτὸ αὐτῇ συμβεβηκυίας, καὶ τοῦ ὁποιοῦν αὐτῆς χρώματός τε καὶ μεγέθους, *Soph.* 63, 33—35. The grammatical note of *Philop.* (295, 8—12) makes no sense as it stands, but if by a slight emendation we read (l. 9) τῶν καθ' αὐτὰ for καθ' αὐτῶν, his view of the construction will agree with that of *Soph.* (63, 33) δυν...καὶ τῶν καθ' αὐτὸ προσόντων...καὶ τῶν κατὰ συμβεβηκός, according to which καθ' αὐτὰ stands for τῶν καθ' αὐτὰ and τὰ συμβεβηκότα for τῶν συμβεβηκότων. In neither of these two ways do the sense-organs perceive the substances of which they are themselves severally composed, always provided that flesh is regarded not as an organ, but as an intra-organic medium.

a 6. δῆλον οὖν. These words introduce the obvious, because the only possible, explanation. If the faculty existed actually, like the sense-organs, the one would act upon the other even in the absence of external objects.

a 7. διὸ. To complete the sense we must before καθάπερ supply τὸ αἰσθητικόν ὅστις or at least οὕτως ἔχει. See *note* on 403 a 12 καθάπερ τῷ εἶδει.

a 9. ἐντελεχέα: to be taken closely with ὄντος, "fire actually existent," that is, "fire operant." Cf. 403 b 25, first *note*.

**a 10. λέγομεν διχῶς.** We say of a man who is not blind and not deaf, that he sees and hears, even though at the moment he is asleep. Hence the two meanings of "perceive" (*αἰσθάνεσθαι*) to be distinguished are (1) "to perceive potentially," i.e. to have the capacity of perception, (2) "to perceive actually," i.e. to be engaged in perception at the moment. This tedious discussion could have been shortened, if A. had two simple technical terms, one for the implicit and another for the explicit stage of actuality; cf. 412 a 10 sq., 22—26. That he has no such pair of terms either for actuality or for the corresponding potentiality is plain from the first sentence of § 7 of this chapter (417 b 29 sqq.), where the two stages of potentiality are cumbrously expressed by "the sense in which a boy, and the sense in which a grown man, may be said to be potentially or in potency a general."

**a 12. ἡ αἴσθησις.** Etymologically the noun in -σις should denote an act, "perceiving" (cf. *βάδισις*, walking) fully as much as the infinitive. But cf. 417 a 3 and see *note* on *εἶδησις*, 402 a 1.

**a 13 ὁμοίως δὲ καὶ τὸ αἰσθάνεσθαι...14 ἐνεργεία.** This is a strange piece of carelessness. The double meaning of *αἴσθησις* has just been inferred from the double meaning of *αἰσθάνεσθαι* (ἐπειδὴ δὲ τὸ αἰσθάνεσθαι λέγομεν διχῶς, ... διχῶς ἂν λέγοιτο καὶ ἡ αἴσθησις). Now apparently the double meaning of *αἰσθάνεσθαι* is adduced as similar to that of *αἴσθησις*. Cf. 423 b 17—20. Torstrik proposed to replace τὸ αἰσθάνεσθαι by τὸ αἰσθητὸν, which gives unexceptionable sense and may be thought to be confirmed by Alex. ἀπ. καὶ λύσ. III. 3, 83, 4 λαβὼν δὲ τὸ διχῶς λέγεσθαι τὸ αἰσθάνεσθαι... ἔλαβεν τὸ τῆς αἰσθήσεως τὴν μὲν εἶναι δυνάμει τὴν δὲ ἐνεργείᾳ, ὁμοίως δὲ καὶ τὸ αἰσθητὸν. However, the mention of the double meaning of *αἰσθητὸν* here would anticipate the distinction drawn in c. 6, where there is no cross reference, and M. Rodier while adopting *αἰσθητὸν* encloses the whole sentence in square brackets as a marginal note which has crept into the text. I prefer to retain the MS. reading, but I cannot help suspecting that, if A. had revised the treatise for publication, he would have made some alteration here, as well as in numerous other passages: cf. 415 b 2 and *note*.

**417 a 14—20.** A preliminary note on action and passivity. Let us proceed on the assumption that to be acted upon and to be moved are identical with being actively operant, motion having been defined in the *Physics* as an active operation of a kind and yet incomplete. Hence wherever there is passivity or motion there must be some agent which is actively operant, and agent and patient are dissimilar before, but assimilated after, the one has acted upon the other [§ 3].

**a 15. τοῦ πάσχειν καὶ τοῦ κινεῖσθαι καὶ τοῦ ἐνεργεῖν:** we shall assume provisionally that, when the faculty actively operates, it is acted upon and set in motion (*κινεῖται*), that is, we return to the position of 416 b 33 ἡ δ' αἴσθησις ἐν τῷ κινεῖσθαι τε καὶ πάσχειν συμβαίνει, with the qualification that by *αἴσθησις* is now meant ἡ κατ' ἐνέργειαν αἴσθησις. That the assumption aforesaid is not without justification when we examine the general conceptions of motion, being acted upon, and active operation, without any restriction to the particular case of sensation, is clear from the following clause.

**a 16 ἐνεργείᾳ τις...17 εἴρηται.** The same view of motion is presented 431 a 6 sq. and in a well-known passage of *Eth. Nic.* 1174 a 19 "every motion requires time and implies an end," ἐν χρόνῳ γὰρ πᾶσα κίνησις καὶ τέλους τινός [int. ἐστίν]: this end it seeks to attain and is incomplete until it has attained it, "e.g. the motion or process of building is complete when the required structure is made—either in the whole time therefore, or in this final moment of it. But in the several portions of this time all the motions are incomplete, and specifically

different from the whole motion and from each other; the fitting together of the stones is different from the fluting of the pillar, and both from the building of the temple. The building of the temple is complete; nothing more is required for the execution of the plan. But the building of the foundation and of the triglyph are incomplete; for each is the building of a part only. These motions, then, are specifically different from one another, and it is impossible to find a motion whose nature is complete at any moment—it is complete, if at all, only in the whole time" (Peters' Trans.). If instead of a popular treatise like *Eth. Nic.*, we turn to the more exact treatment of the subject in the *Physics*, the definition of motion there given is (*Phys.* III. 1, 201 a 10) ἡ τοῦ δύναμει ὄντος ἐντελέχεια ἢ τοιοῦτον (int. κινήτον), but that motion is incomplete is recognised 201 b 31 ἡ κίνησις ἐνέργεια μὲν τις εἶναι δοκεῖ, ἀτελής δέ, the reason being ὅτι ἀτελής τὸ δυνατόν, οὐ ἐστὶν ἡ ἐνέργεια. In *Metaph.* 1048 b 28 A. says: All motion is incomplete (ἀτελής) as growing, learning, walking, building. These, being motions, are incomplete (αὐταὶ δὲ κινήσεις, καὶ ἀτελεῖς γέ). To take a walk and to have finished walking at the same moment are incompatible, as are to be building and to have built, to become and to have become, to be moving and to have moved at the same moment: whereas with energies it is different; the act of sight as of thought is indivisible and independent of time: b 33 ἐώρακε δὲ καὶ ὄρε᾽ ἅμα τὸ αὐτό, καὶ νοεῖ καὶ νενόηκεν.

a 17. πάσχει. See *note* on 407 b 19. καὶ κινεῖται. When the result produced by τὸ ποιοῦν is ἀλλοίωσις, this is one of the species of κίνησις, viz. κίνησις κατὰ τὸ ποιοῦν, κατὰ πάθος. See 405 b 31, 406 a 12 sq. and *notes*: also cf. 434 b 29—435 a 5.

a 18. ὑπὸ τοῦ ποιητικοῦ. Cf. *De Gen. et Corr.* I. 7, 324 b 13 ἔστι δὲ τὸ ποιητικὸν αἴτιον ὡς ὅθεν ἡ ἀρχὴ τῆς κινήσεως. ἐνέργεια ὄντος. The fire which kindles the fuel is actually hot; the fuel can be made hot, and so is potentially hot, even if it has in it cold, the privation of heat; but it will never kindle itself, a 7—9 *supra*. Thus τὸ πάσχον is δυνάμει ποιοῦν τι, but τὸ ποιοῦν must be ἐνέργεια ποιοῦν τι, and the ποιότης in question constitutes the point of similarity, being present actually in the agent and potentially in the patient. We may remark *en passant* that for motion in the widest sense, and primarily of spatial motion, the conclusion also holds that the ultimate cause of motion must be actual, never potential, *Metaph.* Λ., c. 6, especially 1071 b 12—32 and 1072 a 2—7.

a 18. ὑπὸ τοῦ ὁμοίου. The conclusion is perfectly general, with the qualification mentioned below 417 b 4 sq.; cf. *De Gen. et Corr.* I. 7, 323 b 31 ἀνάγκη καὶ τὸ ποιοῦν καὶ τὸ πάσχον τῷ γένει μὲν ὅμοιον εἶναι καὶ ταῦτό. It holds in sensation because, as we shall see, the sensible object is in actuality what the faculty of sense is only potentially: this constitutes the similarity. Cf. 429 b 29—31.

a 19. ὑπὸ τοῦ ἀνομοίου. The sensible object, as it actually is, and the faculty of sense before perception, are dissimilar. This constitutes the dissimilarity. It is in perception that they are assimilated and the faculty becomes what the object already is; cf. *De Gen. et Corr.* I. 7, 323 b 24 τό τε παντελῶς ἕτερον καὶ τὸ μηθεμῇ ταῦτόν ὡσαύτως [int. εὐλογον μὴ πάσχειν]. οὐδὲν γὰρ ἂν πάθοι λευκότης ὑπὸ γραμμῆς ἢ γραμμῇ ὑπὸ λευκότητος. καθάπερ εἶπομεν. Apparently in the discussion of nutrition, the first case of being acted upon to arise, 416 a 29—b 9. Or A. may mean no more than to reiterate the reference to *De Gen. et Corr.* I. 7, given above 417 a 1. This is somewhat less probable.

a 20. πάσχει...ὅμοιον ἐστίν. Compare the parallel version in 418 a 5 sq. Some such formula is repeated *mutatis mutandis* in the chapters on the several senses, e.g. 422 a 7, b 15 sq., 423 b 31.

**417 a 21—418 a 6.** The meaning of the term potential is extended to include racial capacity as well as the capacity which comes when a habit is acquired. Thus in the possession of knowledge we distinguish (1) the stage when the individual has the capacity implied in his belonging to a given species, (2) the stage when the individual has acquired the knowledge, say, of the rules of grammar. At both these stages he is potentially possessed of knowledge. Again, (3) there is the further stage when he puts his knowledge into application [§ 4]. By a similar extension of meaning passivity or to be acted upon comes to include the transition from potentiality to actuality, whereby a thing realises its true nature, and this change is preservation, not destructive alteration; or if an alteration at all, is an alteration in a new sense of the term [§ 5]. When, therefore, the faculty of sense is declared to be potential, this term must be understood to include both the stage reached at birth and the subsequent growth of the faculty by the presentment of external objects; and here lies the difference between sense-perception and knowledge. The objects of knowledge, being universals, are in a manner in the soul itself, while to sense the stimulus of an external object is indispensable [§ 6]. Allowance being made for these distinctions which pass unrecognised in language, the general rule holds that the faculty of sense-perception is potentially what the object of sense is actually. In perception the faculty becomes assimilated to and one in quality with its object [§ 7].

The distinction between two stages of potentiality is laid down *Phys.* VIII. 4, 255 a 30—b 5. If we compare 412 a 10 sq., 22 sqq., where knowledge as potency is opposed to its exercise in act, we see that here A. introduces an intermediate step, knowledge as habit, *ἔξω*, which is act if contrasted with potency, but potency if contrasted with act. Thus it does double duty, the three stages being really four. Cf. what is said of *νοῦς ἐν ἔξει* 429 b 5—9.

**417 a 21. διαιρετόν.** The word is frequently used in the sense of drawing distinctions or analysing a thing. See note on 402 a 23 *διελείν* and cf. 429 b 30. Cf. also *Metaph.* 1048 a 27.

**a 21. νῦν γὰρ ἀπλῶς.** By *νῦν* is meant "in the present discussion regarded as incomplete." *Ἀπλῶς* with *λέγεσθαι* or *σημαίνειν* properly means "in a single sense" as opposed to two (*διχῶς*) or more or several senses (*πλεοναχῶς*) in which a term is used. But when opposed to *ὀρισμένως* it means, like *ἀδιοριστῶς*, "vaguely, without distinction": e.g. *Top.* VIII. 5, 159 a 38 *ἀνάγκη δὴ τὸν ἀποκρινόμενον ὑπέχειν λόγον θέμενον ἥτοι ἔνδοξον ἢ ἄδοξον θέσιν ἢ μηδέτερον, καὶ ἥτοι ἀπλῶς ἔνδοξον ἢ ἄδοξον ἢ ὀρισμένως* and *Metaph.* 1020 b 32 *λέγεται δὲ τὰ μὲν πρῶτα κατ' ἀριθμὸν ἢ ἀπλῶς ἢ ὀρισμένως πρὸς αὐτοὺς ἢ πρὸς ἕν, οἷον τὸ μὲν διπλάσιον πρὸς ἕν ἀριθμὸς ὀρισμένος*. In these passages, as here, it means "without qualification, vaguely, indefinitely."

**a 22. περὶ αὐτῶν, int. περὶ δυνάμεως καὶ ἐντελέχειας.** In 417 a 7 we declared τὸ αἰσθητικὸν to be *δυνάμει μόνον* and 417 a 14—21 general statements were made about *ἐνεργεῖν* and *ἐνέργεια*, in both cases without qualification. In what follows two senses of *δύναμις* are distinguished. In 417 b 2 sqq. the meaning of *πάσχειν* which also appeared in 417 a 15 is further enlarged.

**a 24. τῶν ἐπιστημόνων, int. ἐστί.** This means that without the capacity to learn and so become *ἐπιστήμων* man would not be man.

**a 25. ἤδη.** We at once pronounce him possessed of knowledge without requiring that any further condition should be fulfilled; cf. *Pol.* 1275 b 18 *ὅτι γὰρ ἐξουσία κοινωνεῖν ἀρχῆς βουλευτικῆς ἢ κριτικῆς, πολλῇν ἤδη λέγομεν εἶναι ταύτης τῆς πόλεως*. Cf. 412 a 8.

**a 27. τὸ γένος τοιοῦτον καὶ ἡ ὕλη.** Cf. 417 a 23 sq. and *Metaph.* 1022 b 25 *ἢ αὐτὸ ἢ τὸ γένος*, whence we infer that τὸ γένος = the race or species to which



the individual belongs by birth. With τοιοῦτον supply οἷον ἐπίστασθαι or οἷον δυνατόν εἶναι ἐπίστασθαι. Thus τοιοῦτον = δεκτικὸν τῆς ἐπιστήμης: cf. Alex. Aphr. ἀπ. καὶ λύσ. 83, 20 τὸ φύσιν ἔχον δέξασθαι ἐπιστήμην, 83, 28 ὁ κατὰ τὸ πεφυκέναι [int. λεγόμενος δυνάμει ἐπίστασθαι], Them. 55, 21 H., 101, 14 Sp. The next words present difficulty, for καὶ may be merely explanatory or may introduce a further reason. In the latter case ἡ ὕλη cannot mean, as St Hilaire seemed to think, the material substratum in the composition of the individual; moreover, there seems hardly any reason why difference of matter as giving rise to different capacities should be mentioned in this context. Probably therefore we should take ἡ ὕλη as summing up the latent capacities of the species and not therefore really very different from τὸ γένος, because the capabilities of the race, that is, the latent capabilities of the individual, are such as to render him capable of knowledge. Them. (*loc. cit.*) paraphrases ὅτι τὸ γένος τοιοῦτον καὶ ἡ φύσις ἡ τοῦ ἀνθρώπου, ὡς εἶναι δεκτικὴ ἐπιστήμης: cf. Philop. 299, 27 ὁ γὰρ ἄνθρωπος κοινῶς ἐπιστήμων λέγεται, ὅτι ἡ φύσις ἡ τοῦ ἀνθρώπου ἐπιστήμης δεκτικὴ ἐστὶ· τοῦτο γὰρ αὐτῷ σημαίνει τὸ γένος καὶ ἡ ὕλη, ἀντὶ τοῦ ἡ φύσις αὐτῇ τοῦ ἀνθρώπου καὶ αὐτὸ τὸ ὑποκείμενον· γένος γὰρ λέγει καὶ τὸ ὑποκείμενον. κατὰ τοῦτο τὸ σημανόμενον καὶ τὴν ὕλην ἔφαμεν δυνάμει [412 a 9, where Philop. reads δυνάμει]· πᾶσα γὰρ ὕλη δυνάμει ἐστὶν ἐκεῖνο οὐ ἔστιν ὕλη, τῷ δύνασθαι δέξασθαι αὐτό. Simpl. 121, 17, after explaining δυνάμει ἐπιστήμων by ὡς πεφυκὸς γίνεσθαι διὰ μαθήσεως, continues καὶ τῷ γένει τοῦτο [i.e. this capacity] τοῦτέστιν τῇ ἀνθρωπίνῃ ὑπάρχει φύσει (he therefore interpreted γένος as "the nature of man"), καὶ ὕλικόν τὸ τοιοῦτον δυνάμει ὡς τῷ γίνεσθαι καὶ τῷ ἐτέρωθεν δέχεσθαι τελειούμενον· διὸ πρόσκειται τὸ καὶ ὕλη. Such a capacity, needing development and instruction to perfect it, has kinship with matter. Probably it was from following a Latin translation and not from any deference to this remark of Simpl. that Zabarella treated ὕλη as predicate with τοιοῦτον: haec est potentia ad actum primum, quae est potentia subiectae materiae, quia homo est subiectum, capax ac veluti materia scientiae. The natural endowment implied in being a member of a species is the starting-point of all further acquisition, but A. could hardly use δύναμις here to explain δυνατός. Cf. *Μεταφῆ.* 1032 a 20 ἅπαντα δὲ τὰ γιγνόμενα ἢ φύσει ἢ τέχνῃ ἔχει ὕλην· δυνατόν γὰρ καὶ εἶναι καὶ μὴ εἶναι ἕκαστον αὐτῶν, τοῦτο δ' ἐστὶν ἡ ἐκάστῳ ὕλη, 1039 b 29 sq., 1071 a 8—11, 1069 b 14 sq.

a 29. τῶδε τὸ Α. The same illustration recurs *Μεταφῆ.* 1087 a 20 καὶ ὁ θεωρεῖ ὁ γραμματικός, τῶδε τὸ ἀλφα ἀλφα [int. ἐστὶν].

a 31. ἀλλ' ὁ μὲν. There is no verb in this sentence. We cannot supply κατὰ δύναμιν ἐπιστήμων ἐστὶ from the last sentence because of the participles ἀλλοιωθεὶς and μεταβαλὼν. The effect of these participles is best shown if we supply γίγνεται ἐπιστήμων, "but the one [becomes possessed of knowledge] after modification...the other...." ἀλλοιωθεὶς, "qualitatively changed." The process of conversion from ignorance is, as Philop. remarks, a change from privation to form, and is therefore, strictly speaking, a case of γένεσις rather than of ἀλλοίωσις. In the latter process the substratum remains the same, while the form or quality undergoes change, as exemplified in the change from false opinion to true. Cf. *Μεταφῆ.* 1069 b 10 sq.

a 32. ὁ δ' ἐκ τοῦ. This sentence also must be completed by understanding ἐπιστήμων γίγνεται, and with ἐκ τοῦ ἔχειν...μὴ ἐνεργεῖν δ' εἰς τὸ ἐνεργεῖν, the participle μεταβαλὼν must be supplied from the preceding clause. τὴν αἰσθησιν. The introduction of sense-perception, side by side with a branch of science like grammar, as an instance of the intermediate state, is certainly illogical: ὁ ἔχων τὴν αἰσθησιν instead of being κατὰ δύναμιν ἐπιστήμων is κατὰ δύναμιν αἰσθανόμενος. Cf., however, 417 b 18.

417 b 1. ἄλλον τρόπον. Take these words with μεταβαλὼν understood, "by another sort of change," and not with ἐνεργεῖν.

b 2. οὐκ ἔστι δ' ἀπλοῦν, "is not used in a single sense," i.e. has not invariably the same meaning, is an ambiguous term: cf. 426 a 26 ἀλλ' ἐκείνοι ἀπλῶς ἔλεγον περὶ τῶν λεγομένων οὐχ ἀπλῶς. τὸ πάσχειν. This word is rendered by "suffer" or "be acted upon." It is cognate with πάθος, the passive state or quality. But a thing may (α) be acted upon destructively by something of an opposite nature or (β) be acted on by something similar in such a way as to be preserved and perfected. The importance of this distinction lies in the application to sensation. A. accepts provisionally the common belief that sensation is πάσχειν τι, ἀλλοίωσις (416 b 33 sq., 415 b 24), and therefore κίνησις, but he aims at correcting this view by substituting ἐνέργεια for κίνησις. See 431 a 4—7. Similarly νόησις is often described as πάσχειν τι, but this also requires correction: 429 b 22—430 a 2. Again, for ὁρεξις see 433 b 18.

b 3. σωτηρία, i.e. not a deterioration or reversal, but an enhancing of the present condition, which is raised from potentiality to actuality.

b 4. καὶ ὁμοίου οὕτως ὥς. The agent is generically the same as that which it acts upon, but ἐναντίον or at least ἕτερον: and τὰ ἐναντία belong to the same genus. Hence its similarity is limited by the clause οὕτως ὥς δύναμις ἔχει πρὸς ἐντελέχειαν.

b 5. θεωροῦν γὰρ γίγνεται. I understand ἐπιστήμον with γίγνεται, the participle θεωροῦν denoting the manner (not, as some hold, completing the predication of γίγνεται, which is an odd verb so to use, if we bear in mind ἅμα νοεῖ καὶ νενόηκεν). In technical language, the possessor of the ἔξις, by exercising his wisdom, becomes in actuality wise. His ἔξις is still a potentiality, though of a higher grade: in the schoolmen's phrase *potentia ad secundum actum, ad solam operationem*.

b 6. οὐκ ἔστιν ἀλλοιοῦσθαι. If the term is interpreted strictly, ἀλλοίωσις is ἡ κατὰ τὸ πάθος μεταβολή (*Metab. h.* 1069 b 12), but this is inconsistent with the enhanced existence and self-development which he goes on to describe. Alex. Aphr. suggests γένεσις as a better term to describe not only the second transition from ἔξις to ἐνέργεια, but also the first transition by which a habit is acquired, though he admits that the term Becoming cannot be applied without qualification to the activity of thinking: ἀπ. καὶ λύσ. 84, 23 sq., 28; 81, 27—82, 20. But no physical analogy is adequate to describe an ἐνέργεια: cf. 407 a 32 sq., 431 a 3 sqq., *Eth. Nic.* 1174 a 13—17, b 13 οὐδὲ τούτων οὐθὲν κίνησις οὐδὲ γένεσις. εἰς αὐτό. The meaning is exactly the same as for εἶναι (cod. X, Soph.) and the balance of authority is against the change. Uncial MSS., presumably the archetypes of all our authorities, would omit the breathing altogether. ἡ ἐπίδοσις, "progress" or "growth." The actualisation of a thing enables it to realise itself.

b 8. ὅταν φρονῇ. Cf. 429 b 3 sq. Φρόνησις is an ἐνέργεια strictly so called, while οἰκοδόμησις is an example of physical motion as distinct from ἐνέργεια: see *Metab. h.* 1048 b 23 sq., 30 sq.

b 9. ὅταν οἰκοδομῇ. He then passes from inaction to activity. Cf. 416 b 2. If the transition from potency into act is not ἀλλοίωσις for physical motion, of which building, οἰκοδόμησις, is an example, *a fortiori* it is not so for ἐνέργεια strictly so called, like φρόνησις.

b 9 τὸ μὲν οὖν...το ἄγον. The clause which begins with these words refers to the second transition, viz. that from the ἔξις to the ἐνέργεια, or from knowledge implicit to the exercise of knowledge, and asserts that the agent in this change should not be called instruction. The rest of the sentence b 12—16 deals with the first transition which results in the acquiring of the habit. The patient in

both stages I take to be the same, who, when he has been instructed or has learned for himself, is able to think and exercise his knowledge at will. Cf. 429 b 5—9.

b 10. *κατὰ τὸ νοοῦν καὶ φρονεῖν*: in relation to that which cogitates and thinks. Here *κατὰ* does not much differ from *περὶ* c. acc. = "concerning." The whole phrase indicates the subject of this development from potential to actual, i.e. *τὸ ἀγόμενον* understood as correlative to *τὸ ἄγον*. Alex. Aphr. appears to have read *κατὰ τὸ νοεῖν καὶ φρονεῖν*, unless his citation, *ἀπ. καὶ λύσ.*, 81, 15 sq., is inexact.

b 11. *ἀλλ' ἐτέραν*. No special term is suggested for this application or use of knowledge already acquired.

b 13. *οὐδὲ πάσχειν φατέον*: because of the implication of suffering and deterioration, *φθορά*, which this term and *ἀλλοίωσις* contain. From the stage of pure potentiality advance is possible either to the acquirement of a habit or in the opposite direction towards privation and deterioration.

b 14. *δύο τρόπους*. There is the change from ignorance to knowledge and the change (by forgetting) from knowledge to ignorance.

b 15. *τὰς στέρητικὰς διαθέσεις*, "privative conditions." *Στέρησις* and *ἔξις* are usually opposed, the term *στέρησις* being employed to denote the privation or absence of a particular form, *ἔξις* its presence. They are chiefly used in connexion with the transition from or to contraries, as from health to sickness: cf. *Metaφh.* 1022 b 22, 1070 b 12. In the latter passage form, privation and matter are called the three principles of things. Since *ἔξις* and *στέρησις* are relative terms (*Categ.* 8, 11 a 22 *τῶν πρὸς τι, ἰδ.* 10, 12 a 26 *περὶ ταυτόν τι*), the negative quality may even be said to be in some sense a positive quality: *Metaφh.* 1019 b 6 *εἰ δ' ἡ στέρησις ἐστὶν ἔξις πως...* (b 9) *εἰ ἐνδέχεται ἔχειν στέρησιν*: e.g. cold, the privation of heat, may be regarded equally with heat as a degree of temperature. For the distinction between matter and privation see *Metaφh.* 1033 a 5—26.

b 16. *τὰς ἔξεις καὶ τὴν φύσιν*. The subject is capable of taking on qualities or positive states (*ἔξεις*) and so becoming what nature designed it to be (*φύσιν*, *τουτέστιν ἐφ' ὃ πέφυκε*, as Philoponus puts it, 304, 24 sq.: cf. 418 a 25): nature of course always aiming at the good and tending to perfection. In *Metaφh.* 1044 b 30 A. asks: Since the body is potentially healthy, and disease is the opposite of health, is the body potentially diseased as well as potentially healthy? His answer is 1044 b 32 *ἡ τοῦ μὲν καθ' ἑξιν καὶ κατὰ τὸ εἶδος ὕλη, τοῦ δὲ κατὰ στέρησιν καὶ φθορὰν τὴν παρὰ φύσιν*; In so far as it is related to positive state and to form, the body is the matter of health; in relation to privation and unnatural deterioration, it is the matter of disease. Cf. Bonitz *ad loc.*

b 16. *τοῦ δ' αἰσθητικοῦ*. The distinctions just drawn between the two stages of potentiality and the stage of actuality, and the transitions from the one to the other, apply to sensation as well as to knowledge. The first step which transforms pure potentiality into a sensitive thing or potential sensibility is taken at birth. The animal after birth has an aptitude (*ἔξις*) for sensation, which is similar to the possession of knowledge without the application of it. Later on, upon contact with external objects, the animal will exercise its powers of sensation, just as the one possessed of knowledge passes to the application and active exercise of his knowledge. Thus sense is a *δύναμις συγγενής*, *Metaφh.* 1047 b 31 sqq., it comes neither by habit nor by instruction; whereas artistic skill and moral virtue are only acquired by practice. *ἡ μὲν πρώτη μεταβολή*. The first change implies a second change. The commentators take the first to be the passage from pure indeterminate potentiality to the *ἔξις* of sensitivity in

the one case and of knowledge in the other. The second change is the passage from this *ἔξις* unused to its actual exercise, cf. Alex. Aphr. ἀπ. καὶ λύσ. III. 3, 84, 33 εἰπὼν δὲ ταῦτα...μετῆλθεν ἐπὶ τὴν αἰσθησιν, καὶ ἔδειξεν, τίς μὲν ἡ πρώτη δύναμις ἐστὶ, καὶ πῶς καὶ ὑπὸ τίνος εἰς τὴν ἔξιν μεταβάλλει ἡ τοιαύτη δύναμις, πῶς δὲ καὶ ὑπὸ τίνος ἡ δευτέρα εἰς τὴν ἐνέργειαν, καὶ λέγει τὴν μὲν ἐκ τῆς ὕλικῆς δυνάμεως μεταβολὴν εἰς τὴν κατὰ τὴν ἔξιν γενέσθαι ὑπὸ τοῦ γεννῶντος δηλονότι τὸ ζῶον.

b 17. ὅταν δὲ γεννηθῇ, int. τὸ ζῶον. Them. however might be thought to imply that the subject is τὸ αἰσθητικόν: 56, 15 H., 103, 1 Sp. ἐπὶ τῆς αἰσθήσεως τὸ μὲν σπέρμα τοῦ ζώου καὶ τὸ ὄν τὴν πρώτην μεταβάλλει μεταβολήν, καθ' ἣν γίνεται αἰσθητικόν.

b 18. ἔχει ἤδη...καὶ τὸ αἰσθάνεσθαι. This does not imply a new transition, but describes the consequence of the first, the possession of a power of sensation even before it is exercised. ὥσπερ ἐπιστήμην, in the same way as (in the example) ὁ δυνάμει ἐπιστήμων possesses knowledge, that is, he has the capacity to know even when he is not exercising it. So after birth, the child has the capacity of sense-perception, whether he exercises it or not; cf. Alex. Aphr. ἀπ. καὶ λύσ. III. 3, 85, 1 γεννηθὲν δὲ ἔχει τὴν αἰσθητικὴν ἔξιν εὐθύς, ὥσπερ τὸ ἀναλαβὼν τὴν ἐπιστήμην. Το ὥσπερ answers καὶ by a well-known idiom which the phrase of Thucydides ὡς ἔδοξεν αὐτοῖς, καὶ ἐποιοῦν ταῦτα sufficiently illustrates. καὶ τὸ κατ' ἐνέργειαν δὲ, int. αἰσθάνεσθαι. Καὶ...δέ, "yes, and." The parallel between sense-perception and knowledge is still maintained.

b 19. ὁμοίως λέγεται τῷ θεωρεῖν, we speak of the actual exercise of sensation in the same way as we speak of the application or actual exercise of knowledge. Cf. *De Sensu* 4, 441 b 22 οὐ γὰρ κατὰ τὸ μαθάνειν ἀλλὰ κατὰ τὸ θεωρεῖν ἐστὶ τὸ αἰσθάνεσθαι. As θεωρεῖν, at all events, is explicit actuality and the transition from the *ἔξις* of ἐπιστήμη to θεωρεῖν, or from (2) to (3) of the stages distinguished in 417 a 22 sq., constitutes the second μεταβολή, in the case of αἰσθάνεσθαι this second transition must be that from the sensitivity or power of sensation, with which the creature is endowed at birth, to the active exercise of this power in actual sensation.

b 20. τοῦ μὲν, int. αἰσθάνεσθαι. By τὰ ποιητικὰ τῆς ἐνεργείας are to be understood the agents which educe and transform potential sense, the faculty, into actual sensation, b 22. For, on the assumption that to perceive is to be passively affected and acted upon, there must be such an agent. Cf. 417 a 17 sq. *supra*, 426 a 4 sq., 431 a 4 sq., *De Sensu* 6, 445 b 7 ποιητικὸν γὰρ ἐστὶν ἕκαστον αὐτῶν [int. τῶν παθημάτων τῶν αἰσθητῶν] τῆς αἰσθήσεως· τῷ δύνασθαι γὰρ κινεῖν αὐτὴν λέγεται πάντα, *Metaφh.* 1010 b 31—1011 a 2. ἔξωθεν. The affection of the percipient is αἶσθημα, *Metaφh.* 1010 b 32. Its cause is something distinct from sense, ἕτερον παρὰ τὴν αἰσθησιν, and prior to it, *ib.* b 36 sq.: cf. *De Insomn.* 2, 460 b 2 ἀπελθόντος τοῦ θύραθεν αἰσθητοῦ ἐμμένει τὰ αἰσθήματα αἰσθητὰ ὄντα. Properly speaking, external objects do not affect the αἰσθητικόν, but only the αἰσθητήριον or organ of sense. Cf. Them. 56, 39 H., 104, 9 Sp. ὅτι γὰρ οὐ πάσχουσα κυρίως ἡ αἰσθησις ὑπὸ τῶν αἰσθητῶν, ἀλλ' οὐδὲ ἀλλοιουμένη δέχεται αὐτῶν τὰ εἶδη, δηλὸν ἐκείθεν· οὐ γὰρ λευκὴ γινομένη τῶν λευκῶν ἀντιλαμβάνεται, οὐδὲ θερμὴ τῶν θερμῶν, *Simpl.* 124, 3 τουτέστιν ὅτι δεῖ τι παθεῖν τὸ αἰσθητήριον ὑπὸ τῶν αἰσθητῶν ἔξω καὶ οὐκ ἐν τῷ αἰσθανομένῳ ὄντων· ἅπερ ποιητικὰ τῆς ἐνεργείας λέγεται, οὐχ ὡς ἐμποιοῦντα τὴν κρίσιν, ἀλλ' ὡς πάθος τι ἐν τῷ αἰσθητηρίῳ, ἐφ' ᾧ ἡ κριτικὴ ἐγείρεται ἐνέργεια. But it will be presently explained (424 a 24—28) how the two, organ and faculty, are inseparably connected.

b 22. τῶν καθ' ἕκαστον, int. ἐστὶ. The actual exercise of sensation is concerned with particulars: cf. *Anal. Post.* I. 18, 81 b 6 τῶν γὰρ καθ' ἕκαστον ἡ αἰσθησις and I. 31, 87 b 28 εἰ γὰρ καὶ ἔστιν ἡ αἰσθησις τοῦ τοιοῦδε καὶ μὴ τοῦδὲ

τινος, ἀλλ' αἰσθάνεσθαι γε ἀναγκαῖον τόδε τι καὶ ποῦ καὶ νῦν. Thus it is restricted to a particular place and a particular time.

b 23. τῶν καθόλου. The objects of knowledge are universals; cf. again *Anal. Post.* I. 31, 87 b 37 αἰσθάνεσθαι μὲν γὰρ ἀνάγκη καθ' ἕκαστον, ἡ δ' ἐπιστήμη τῷ τὸ καθόλου γνωρίζειν ἐστίν: also 87 b 39—88 a 7. ἐν αὐτῇ πῶς ἐστι τῇ ψυχῇ. Cf. *infra* 429 a 22—31, 431 b 26—432 a 3. By πῶς, as we shall see hereafter, he means δυνάμει. Cf. 431 b 20, 22.

b 24. ἐπ' αὐτῷ, int. ἐστίν, "is in a man's power." Of Simplicius' alternative explanations of αὐτῷ (124, 28—30), the last τῷ ἐπιστήμονι ἀνθρώπῳ is preferable to τῷ ἐν τῇ ψυχῇ νῷ and to τῇ εἰς νοῦν ἀνεγειρομένη ψυχῇ.

b 25. ὑπάρχειν. The presence of the sensible object here and now is a necessary condition. See *Anal. Post.* 87 b 29, cited above, *note* on 417 b 22.

b 26. ὁμοίως δὲ. What has been said about sense-perception applies equally to the arts and sciences based upon sense-perception. The practical and productive arts and sciences, commonly so called, require the use of external materials: architecture, navigation and (to a less degree) painting. But the reference need not be restricted to such sciences: cf. *Them.* 56, 25 H., 103, 17 Sp. ὅσαι τῶν τεχνῶν ποιητικώτεραι. All detailed observation which depends on external objects is intended.

b 29. εἰσαυθίς. The subject of νοῦς is resumed in III., c. 4.

b 31. τὸν παῖδα. The potentiality in this case is quite indeterminate. The child is capable of becoming a general or anything else, as he is capable of knowing and perceiving.

b 32. οὕτως ἔχει τὸ αἰσθητικόν. This has been taken to mean that it is with sensibility as with knowledge, viz. that sensibility, like knowledge, has two grades of potentiality. But the Greek commentators must surely be right in restricting οὕτως to the second grade, οὕτως ἀλλ' οὐκ ἐκείνως: "it is in this latter sense that we must understand the term potential of the sensitive subject." Cf. *Alex. Aphr.*, ἀπ. καὶ λύσ. 85, 25 κατὰ τὸ δεύτερον σημαίνονμενον τοῦ δυνάμει τὸ δυνάμει αἰσθάνεσθαι καὶ τὴν δυνάμει αἰσθησιν λέγεσθαι. The corresponding use of οὗτος = the latter of two, the last of three, is not uncommon, e.g. *Phys.* VIII, 7, 260 a 28, where ταύτην must replace φορὰν.

418 a 3. ὡς κύριους ὀνόμασιν, as proper and adequate terms for whichever of the two processes we are talking about. When we talk of sensation, they will denote the latter process, viz. the transition from ἔξις to ἐνέργεια, if I am right in following the commentators in the preceding note, though these terms are not strictly appropriate to the transition from ἔξις to ἐνέργεια (called above σωτηρία τοῦ δυνάμει ὄντος). Obviously when a term has two or more meanings, it cannot be strictly appropriate to more than one. Readers of the *Poetic* are familiar with κύριον ὄνομα as opposed to μεταφορά, γλῶττα or ξενικόν for the legitimate, ordinary, current application of a term in contradistinction to its figurative or archaic use (cf. 1457 b 3, 1458 a 19, a 22 sq.): κύριον ὄνομα, as Cope says, is "the proper word by which any object is designated and the word correctly employed to express it." Trend. thinks the metaphor is from the law courts, "as far as their authority goes." I prefer to explain, "not as technicalities but as ordinary words with ordinary liabilities," and therefore taking on the necessary qualifications in particular cases.

a 4. οἶον. It is to be noted that it is in respect of quality that faculty is assimilated to the sensible object, cf. *infra* 424 a 22 ὑπὸ τοῦ ἔχοντος χρώμα ἢ χυμὸν ἢ ψόφον πάσχει, ἀλλ' οὐχ ἢ ἕκαστον ἐκείνων λέγεται, ἀλλ' ἢ τοιονδί. καθάπερ εἴρηται. This has been virtually anticipated if we piece together 417 b 18 sq., 417 b 3—7, 417 a 12—20. In other words, the faculty of sense must be capable

of assuming the peculiar quality of the object of sense, and in the act of sensation the faculty adapts itself to the object. To begin with they are dissimilar, but in the act of sensation they become similar. In sensation the faculty takes in the object *minus* its matter.

a 5. πᾶσχει μὲν οὖν. Cf. *supra* 417 a 19, 20, *notes*.

## CHAPTER VI.

**418 a 7—25.** Objects of sense may be classified according as they are perceived (a) *per se*, in themselves or (b) *per accidens*, incidentally. Objects directly perceived may be either (1) objects of the special senses or (2) objects common to several, or all, of the senses [§ 1]. An object of a special sense is that which one sense only can perceive, about which that one sense cannot be mistaken, as colour, sound and the various qualities corresponding to the varieties of the sense of touch [§ 2]. Objects of the senses in common are such qualities as motion, rest, number, shape and magnitude [§ 3]. Besides these, there are (δ) objects indirectly or accidentally perceived. In such cases what is perceived is an accident or concomitant of the object perceived directly or *per se*. This latter is the sensible object in the proper sense of the term [§ 4].

In order to understand the full import of A.'s distinction we must enlarge our notion of *συμβεβηκός*. Usually a quality or attribute is said to be an accident of, or to belong to, a thing or substance. But, as *συμβαίνειν* means simply "to go with" or "accompany" something, it may be, and is, used to denote the thing or substance which goes with or accompanies its attribute or quality: e.g. we perceive white colour directly, but the son of Diares, the substance to which the colour belongs, we perceive indirectly, the man being regarded as a concomitant of the colour.

**418 a 8. πῶτον.** In accordance with the rules of procedure laid down in II., c. 4, we must study not only the *ἔργα καὶ πράξεις*, but also the *ἀντικείμενα*. Cf. 415 a 16—22. καὶ αὐτὰ...9 κατὰ συμβεβηκός. It has been shown in the notes on 406 a 4, 5 that κατὰ = "in virtue of" and why two phrases the precise meaning of which is *per se* and *per accidens* should, like καὶ αὐτὸ and καὶ ἕτερον, become practically equivalent to "directly" and "indirectly." We perceive the qualities of things, τὰ ἴδια αἰσθητά, and the attributes of things, τὰ κοινὰ αἰσθητά, directly; the things themselves, to which these qualities and attributes belong, we perceive indirectly. This account, transparently simple as it seems, raises some further questions. The common belief is that we directly perceive the things, and the analysis of sensation points the same way. In II., c. 5 we learned that the process of actual sensation, the transition of the faculty from potentiality to active operation, has an external cause, τὸ αἰσθητόν, τὸ καὶ ἕκαστον, which we are bound to regard as a substance or thing. What then, exactly, is perceived, the qualities and attributes, or the things to which they belong? For example, is it χρώμα or τὸ ἔχον τὸ χρώμα? A.'s answer would seem to be (cf. 418 a 24 sq.) that, properly speaking, the quality or attribute, not the thing or subject of attributes, is perceived directly. Investigations of the special senses tend to confirm this. But the implications of ordinary language and the thought which it expresses, as well as his own doctrine that qualities, attributes and properties do not exist independently of the things or substances in which they inhere, compel him to find some means by which things or substances, e.g. τὸ ἔχον τὸ

χρῶμα, may also be entitled to rank as perceived objects or sensibles. Accordingly, he says we perceive the thing *per accidens*. If he occasionally employs ordinary language and speaks of the thing, not its quality, as perceived by the special senses (e.g. 422 a 10), this must be taken with the qualification "so far as it possesses the quality in question," e.g. the thing *quā* coloured, sonorous or odorous. It is the constant tendency of language and thought to neglect this qualification and to treat the part as if it were the whole. We really perceive whiteness, we think and say we perceive Cleon. The phrase *κατὰ συμβεβηκός* first occurred in this connexion 414 b 9 (on 417 a 5 sq. see *note*): we shall meet with it again in III., c. 1 and III., c. 3. Cf. 425 a 15, a 20—b 4, 428 b 18—30.

a 10. *κοινὸν πασῶν*. This statement requires qualification. See *note* on a 19 *infra*.

a 11 *δὲ μὴ ἐνδέχεται... ἵνα ἀπατηθῇναι*. Probably the two characteristics should be taken together. Cf. the important qualification of 428 b 18 *ἡ αἰσθησις τῶν μὲν ἰδίων ἀληθῆς ἐστίν ἢ ὅτι ὀλίγιστον ἔχουσα τὸ ψεῦδος*: also 428 a 11 sq., 430 b 29 sqq. (of sight). *De Sensu* 4, 442 b 8 *διὸ καὶ περὶ μὲν τούτων* [int. *τῶν κοινῶν*] *ἀπατῶνται*, *περὶ δὲ τῶν ἰδίων οὐκ ἀπατῶνται*, *οἷον ἡ ὄψις περὶ χρώματος καὶ ἡ ἀκοή περὶ ψόφου*, *Μεταφῆ.* 1010 b 2 sq., with which must be taken the qualifications 1010 b 14—26.

a 12. *οἷον ὄψις χρώματος*. We might have expected *χρῶμα ὅψεως* [*ἴδιον κτέ.*] to conform with *ἴδιον ἐκάστης αἰσθήσεως* above. But a fresh construction seems to begin with *οἷον*, "sight is of colour," a genitive of relation, as in 418 a 26, 422 a 20 sqq., 422 b 24, 424 b 34; or we might supply *αἰσθάνεται ὡς ἰδίου* from a 12 *αἰσθάνεσθαι*; or, less plausibly, *κριτική ἐστι* from a 14 *κρίνει* below; or again *χρώματος*, *ψόφου*, *χυμοῦ* might conceivably, though not very probably, be objective genitives closely attached to the governing nouns, in which case there would be no need to supply *ἐστί*. Cf. 430 b 29 *τὸ ὁρᾶν τοῦ ἰδίου ἀληθές*: where, however, see critical *notes*.

a 14. *πλείους μὲν ἔχει διαφοράς*. I consider *μὲν solitarium*, as in 412 a 7. Whatever the punctuation, the sentence *ἀλλ' ἐκάστη γε κτέ.* does not in meaning answer the present clause. For *μὲν solitarium* cf. *De Interpr.* 14, 23 b 30, *Pol.* 1257 a 15, 1262 a 7, 1270 a 34, 1271 a 19, 1284 b 13. See also Wyse, *Speeches of Isaeus*, p. 181. What A. means is explained 422 b 17 sqq., where the question is raised whether touch be not one single sense, but a variety of senses with a corresponding variety of objects. It is quite another matter that the single senses of sight and hearing are sometimes said to reveal many qualities in objects. Thus we have the varieties of colour recognised 421 a 14 sq., varieties both of colour and of sonorous objects in 420 a 26—29 and similar varieties of flavours and odours, there called *εἶδη* (=species), 421 a 16—18, 422 b 10: cf. *Μεταφῆ.* 980 a 26 *μάλιστα ποιεῖ γνωρίζειν ἡμᾶς αὕτη τῶν αἰσθήσεων καὶ πολλὰς δηλοῖ διαφοράς* [int. *ἡ ὄψις*], *De A.* 422 b 28 *καὶ ἐπὶ τῶν ἄλλων αἰσθήσεων εἰσιν ἐναντιώσεις πλείους, οἷον ἐν φωνῇ οὐ μόνον ὀξύτης καὶ βαρύτης, ἀλλὰ καὶ μέγεθος καὶ μικρότης καὶ λειότης καὶ τραχύτης φωνῆς καὶ τοιαῦθ' ἕτερα*. *εἰσὶ δὲ καὶ περὶ χρώμα διαφοραὶ τοιαῦται ἕτερα*. All these are varieties of colour in the one case and sound in the other, whereas A. is careful to point out that it is not possible to reduce all tangibles to any one such common quality: 422 b 32 *ἀλλὰ τί τὸ ἐν τῷ ὑποκείμενον, ὥσπερ ἀκοὴ ψόφος, οὕτω τῇ ἀφῇ, οὐκ ἐστὶν ἐνδηλον*. They form at least two groups, temperature and resistance.

a 15. *περὶ τούτων*, int. *τῶν ἰδίων*.

a 16. *ἀλλὰ τί*. This is a judgment respecting the direct object, whether that object be construed strictly as the quality, colour, or as the thing or

substance, *τόδε τι*, in which the colour inheres. Thus, as a judgment, it falls outside the province of the special sense. Note that the neuter adjective is ambiguous. As *τὸ καλὸν* = beauty, so *τὸ λευκὸν* = whiteness. Even in English the white, the beautiful may mean either thing or quality, but the dark need not, and usually does not, mean a thing or substance, *τόδε τι*. Sensation pure and simple, without the reference to a thing, would be expressed in a judgment of a different form: "It is white," or at the utmost "This sensation is the sensation of white."

a 17. *ἐκάστου*. There is no need to alter this, with the scribe of W, into *ἐκάστος*, if we follow the lax ruling of Bonitz, *Ind. Ar.* 484 a 59: pronomina demonstrativa interdum non sequuntur genus eius nominis, ad quod referuntur, sed neutro genere ponuntur. Cf. 418 b 18 *ἔστι δὲ τὸ σκότος στέρησις τῆς τοιαύτης ἕξεως ἐκ διαφανούς, ὥστε δηλὸν ὅτι καὶ ἡ τοῦτου παρουσία τὸ φῶς ἐστίν*. In any case the meaning is clear: "are special to each sense," as *ἴδιον...ἐκάστης αἰσθήσεως* above. *κοινά*. On these see 425 a 14 sqq. and *De Sensu* I, 437 a 8 sq., where their perception is attributed chiefly (*μάλιστα*) to sight. Also cf. Plato, *Theaet.* 185 C, D, where the conception of "common objects of apprehension" is the same, though number is the only example common to the two lists, and Plato refuses in the sequel to attribute their apprehension to sense at all, but makes them directly apprehended by the soul itself. Cf. *De Insomn.* I, 458 b 4 *κοινὰ δ' ἐστὶ τῶν αἰσθήσεων οἷον σχῆμα καὶ μέγεθος καὶ κίνησις καὶ τὰλλα τὰ τοιαῦτα, ἴδια δ' οἷον χρῶμα ψόφος χυμός, De Mem.* I, 450 a 9 *μέγεθος δ' ἀναγκαῖον γνωρίζειν καὶ κίνησιν ᾧ καὶ χρόνον· καὶ τὸ φάντασμα τῆς κοινῆς αἰσθήσεως πάθος ἐστίν· ὥστε τοῦτο φανερόν ὅτι τῷ πρώτῳ αἰσθητικῷ τούτων* [int. *χρόνου, μεγέθους, κινήσεως*] *ἡ γνῶσις ἐστίν, ib.* 451 a 16 sq. The omission of time, in view of 433 b 7 *χρόνου αἰσθησιν*, is remarkable, but, since it is defined as *ἀριθμὸς κινήσεως κατὰ τὸ πρότερον καὶ ὕστερον, Phys.* IV. 11, 219 b 2, its claim to a place on the list must be regarded as deducible either from number or from motion or both. The reference in *Eth. Nic.* 1142 a 27 *οὐχ ἡ τῶν ἰδίων* [int. *αἰσθησιν*], ἀλλ' *οἷα αἰσθανόμεθα ὅτι τὸ ἐν τοῖς μαθηματικοῖς ἔσχατον τρίγωνον* must be to *σχῆμα* as one of the *κοινά*. Bywater brackets *ἐν τοῖς μαθηματικοῖς*.

a 19. *πάσαις*. Cf. the important passage 425 a 14—30, which introduces us to *sensus communis* in relation to these common sensibles. The statement *κοινὰ πάσαις* is quite true of number and unity (see 425 a 19 sq.): each sense perceives one object, and number is made up of units. The statement is also true of motion, but magnitude and figure can hardly be said to be directly perceived except by sight and touch. Cf. *De Sensu* 4, 442 b 5 *μέγεθος γὰρ καὶ σχῆμα καὶ τὸ τραχὺ καὶ τὸ λείον, ἔτι δὲ τὸ ὀξύ καὶ τὸ ἀμβλὺ τὸ ἐν τοῖς ὄγκοις κοινὰ τῶν αἰσθήσεών ἐστιν, εἰ δὲ μὴ πασῶν, ἀλλ' ὅψεώς γε καὶ ἀφῆς*, where it will be seen that A. adds *τραχὺ* and *λείον*, *ὀξύ* and *ἀμβλὺ* to the list of common sensibles, or rather to those common to sight and touch. The fact is that no one of these common sensibles is perceived by one sense only; and all the senses, in various combinations, at one time or another contribute to make them known. This leads to new and important developments, 425 a 27.

a 22. *τούτου*, "him," i.e. Diaretes' son. Strictly speaking, it is the whiteness of the object that you perceive by the sense of sight. This is plainly stated in 425 a 24 *οὐδαμῶς ἂν ἀλλ' ἡ κατὰ συμβεβηκὸς ἡσθανόμεθα, οἷον τὸν Κλέωνος υἱὸν οὐχ ὅτι Κλέωνος υἱός, ἀλλ' ὅτι λευκός· τούτῳ δὲ συμβέβηκεν υἱὸς Κλέωνος εἶναι*. Cf. *Simpl. in Phys.* 1062, 2 *ὁ γὰρ Σωκράτης κατὰ συμβεβηκὸς ὁρατός, καθ' αὐτὸ δὲ τὸ χρῶμα αἰσθάνεται*, int. *ὁ αἰσθανόμενος*. Cf. 403 a 22, *note*. *ὅτι*, "because." The clause explains why Diaretes' son is said to be perceived *κατὰ συμβεβηκός*, "as a concomitant": that is what he is.



a 23. τοῦτο οὐ αἰσθάνεται, "that which in this manner (i.e. indirectly) you perceive," viz. Diare's son, the substance to which the quality white belongs. Thus τοῦτο and τοῦτον refer to the same thing. As above remarked, though it is more usual to call the quality whiteness a συμβεβηκός of the substance, we have a perfect right to call the thing or substance a συμβεβηκός of the quality, and this A. occasionally does: e.g. 425 a 25 sq., *Anal. Prior.* I. 27, 43 a 33 τῶν γὰρ αἰσθητῶν σχεδὸν ἕκαστόν ἐστι τοιοῦτον ὥστε μὴ κατηγορεῖσθαι κατὰ μηδενός, πλὴν ὡς κατὰ συμβεβηκός· φαμέν γάρ ποτε τὸ λευκὸν ἐκείνῳ Σωκράτην εἶναι καὶ τὸ προσιὸν Καλλίαν, *Anal. Post.* I. 22, 83 a 1—14, a passage in which both uses of the term κατὰ συμβεβηκός occur. See Torst. pp. 175 sq. (*note* on 428 b 18) and the remarks of Professor Bywater on the same passage, *Journal of Phil.* XVII., p. 57. The order of the words makes it more natural to regard τοῦτο as the antecedent of οὐ, though it is just conceivable that τῷ λευκῷ, far removed as it is from the relative, is the antecedent. We should then translate "because this fact is incidental to the white thing which the subject perceives directly." Still, the perception of a white object, being a case of direct perception, is not what at this point we should expect to be marked by οὐ αἰσθάνεται, but rather the perception of something *per accidens*. Such a view might, it is true, be thought to derive support from the paraphrase of Them. 58, 8 H., 106, 16 Sp., which in Spengel's text appears as follows: 'Αριστοτέλης δὲ τὰ κατὰ συμβεβηκός αἰσθητὰ οὕτως ἐρμηνεύει· κατὰ συμβεβηκός γὰρ τούτου αἰσθάνεται, διότι τῷ λευκῷ οὐ αἰσθάνεται, τοῦτο συμβέβηκεν, ὥσπερ ἂν εἰ λέγοι ὅτι κατὰ συμβεβηκός τοῦ Διάρους αἰσθάνεται, ὅτι τῷ λευκῷ συμβέβηκε Διάρει εἶναι. Heinze, however, following 418 a 22 ὅτι τῷ λευκῷ συμβέβηκε τοῦτο οὐ αἰσθάνεται, in spite of all the MSS. of Them., has altered the relative order of the words in thick type. He gives τοῦτο συμβέβηκεν οὐ αἰσθάνεται, and this does better accord with the subsequent words of Them. ὅτι τῷ λευκῷ συμβέβηκε Διάρει εἶναι. ἢ τοιοῦτον. To be taken with τοῦ αἰσθητοῦ. The percipient subject, τὸ αἰσθανόμενον, is not acted upon by the concomitant thus indirectly perceived, τοῦ αἰσθητοῦ, as such, i.e. as κατὰ συμβεβηκός αἰσθητόν (in the illustration the eye is not affected by the white object, *quā* son of Diare's), but by the sensible object as coloured, sonant, flavoured or tangible. Cf. 424 a 23 ἀλλ' οὐχ ἢ ἕκαστον ἐκείνων λέγεται, ἀλλ' ἢ τοιονδί. However, A. permits himself to substitute the universal, e.g. colour, for the specific shade of colour as τὸ αἰσθητόν, of course κατὰ συμβεβηκός. See *Metaφh.* 1087 a 19 ἀλλὰ κατὰ συμβεβηκός ἡ ὄψις τὸ καθόλου χρώμα ὁρᾷ, ὅτι τότε τὸ χρώμα ὁ ὁρᾷ χρώμά ἐστιν· καὶ ὁ θεωρεῖ ὁ γραμματικός, τότε τὸ ἄλφα ἄλφα.

a 24. τὰ ἴδια, the specific objects of the particular senses and not τὰ κοινά, although both alike are καθ' αὐτὰ αἰσθητά. The view that the quality of the thing, and not the thing itself, is properly perceptible by sense is confirmed by *De Sensu* 6, 445 b 11—13, where a body without colour, weight, or any other such attribute, viz. sound, smell, flavour or tactile properties, is declared to be not perceptible by sense at all, οὐδ' αἰσθητόν ὅλως. A. continues b 13 ταῦτα γὰρ [int. τὰ πάθη] τὰ αἰσθητά.

a 25. πρὸς δ. The relative sentence is part of the predicate, joined to κυρίως αἰσθητά. The teleological view again emerges. Each sense is by nature so constituted as to be affected by, and to perceive, its special objects. Thus, while concomitant or accidental objects of sense, as such, exert no influence on the sense, direct objects of sense, whether κοινὰ or ἴδια, do; with the difference that the κοινὰ are always associated in perception with the specific objects of particular senses. While the eye is always affected by and perceives colour, it makes all the difference whether the coloured object be perceived as of a given shape or size, in rest or in motion. This chapter must

be carefully compared with Book III., cc. 1, 2. Whatever conclusion be adopted on the controverted points, it is obvious that perception *per accidens* receives an extension of meaning in III., c. 1. Cf. also *Metaph.* 1087 a 19 sq. cited in second note on 418 a 23 *supra*. If, then, A. has not given complete information on one important point raised in II., c. 6, it may be plausibly argued that the account here given of τὰ κοινὰ is also imperfect.

## CHAPTER VII.

In placing sight at the head of the special senses A. departs from the rule he has hitherto observed of starting with the lowest and most widely diffused manifestation of life. If he had conformed to this rule, he would have begun with touch. Cf. *Eth. Nic.* 1118 b 1—3. In III., c. 12 A. does begin with touch 434 b 10 sqq. and proceeds to taste b 18 sqq. and the other senses b 24 sqq. Why, then, is the *ordo doctrinae* not the *ordo naturae* here also? Various reasons have been assigned for the procedure: almost every commentator has his own. It may have been the difficulty of establishing the presence of a medium in taste and touch which determined A. to reserve these senses until he had firmly established the necessity of a medium for seeing, hearing, smelling. Sight, he tells us (429 a 3), is the sense *par excellence*, and writers of all ages have been tempted to regard it as the typical sense and to make general statements about sensation, which are only partially, if at all true, of the other senses; just as A.'s predecessors concentrated their attention upon the soul of man, while at the same time making statements about the soul in general. In the application of his doctrine of sensation to memory and imagination A. appears to err in this direction. Zabarella maintains that sight was taken first for purely practical reasons, because it had been most studied: more information had been accumulated about it, and it was therefore the easiest of the senses to explain.

In the explanation of sight A. proceeds from the cardinal facts that by this sense we distinguish objects (1) at a distance, (2) as coloured. Hence he assumes a medium upon which colour can act. The medium, in itself neutral, has two determinations, a positive state when it is illuminated and we say there is light, a negative state when we say there is darkness. The motion or activity set up by colour is of the type ἀλλοίωσις and not of the type φερά, for it takes place instantaneously, however great the distance between the coloured object and the eye. If the medium is there and not actualised, we have darkness, which is not the contrary of light but its mere absence; the normal activity of the medium gives light but not colour, special states of the medium when it is stimulated in special ways in consequence of special agents give colouring, and it is the presence of colours which makes things visible. This medium he calls "the transparent," τὸ διαφανές. Light itself, or this medium in normal operation, is not visible *per se*, but it is the necessary condition of the visibility of colour. The necessity of the medium and the prominent part it plays are more obvious in the case of seeing: and this is why, of the three topics discussed in the case of each special sense, viz. (1) the object, (2) the medium and (3) the sense-organ, in the words of Zabarella: Hic Aristoteles de obiecto pauca, de organo nihil, de medio permulta dicturus est. Here we have a valuable supplement in the *De Sensu*: in c. 2 of that tract the organ of vision receives considerable attention, c. 3 is wholly devoted to colours as the object of

vision, while the problems of cc. 6 and 7 have especial reference to that which A. regards as the principal and typical sense.

These facts premised, we give a short abstract of §§ 1, 2.

**418 a 26—b 17.** The object of sight is colour and phosphorescence, colour being crudely defined as that with which an object visible in itself is overlaid. It is the nature of colour to set the medium, which we may call "the transparent," in motion [§ 1]. Such a transparent medium is found in air and water, not as being air and water, but because of the presence in them of this something, the medium, which is also present in the eternal body above us [aether], and the medium is set in activity by fire or by aether, which has the same illuminative property as fire. From this it follows that light is not fire [as had been maintained by previous thinkers] nor anything corporeal at all, nor any emanation from body (which would be equally corporeal). Light is solely the presence of fire or of a similar agency in the medium [§ 2].

**418 a 26.** οὐ μὲν οὖν...δρατόν. It is implied that *δρασις* is the process or operation (ἔργον or πράξις) of vision. Here again (cf. 418 a 7) A. is careful to follow the method proposed 415 a 16—22. He passes directly from the faculty (ὄψις) to the process (δρασις), and from the process to the correlated object (δρατόν). We shall find that he adheres to this procedure when dealing with each of the other senses. δρατόν δ'. The special object of the sense of sight, i.e. the visible, is (1) colour, (2) phosphorescence. The best clue to the meaning of this discussion is to bear in mind that colour was regarded by the Pythagoreans as the surface of bodies, *De Sensu* 3, 439 a 30 τὸ γὰρ χρῶμα ἢ ἐν τῷ πέραςί ἐστιν ἢ πέρας· διὸ καὶ οἱ Πυθαγόρειοι τὴν ἐπιφάνειαν χροῖαν ἐκάλουν. A. corrects this view by making colour a property in the extremity, but not itself the extremity of bodies: 439 a 31 ἔστι μὲν γὰρ ἐν τῷ τοῦ σώματος πέρατι, ἀλλ' οὐ τι τὸ τοῦ σώματος πέρας, ἀλλὰ τὴν αὐτὴν φύσιν δεῖ νομίζειν, ἥπερ καὶ ἔξω χρωματίζεται, ταύτην καὶ ἐντός. He still speaks of it here (418 a 29) as τὸ ἐπὶ τοῦ καθ' αὐτὸ δρατοῦ: cf. *Top.* 107 b 28 and *Metaph.* 1022 a 16 ἐν ᾧ πρῶτῳ πέφυκε γίνεσθαι, οἷον τὸ χρῶμα ἐν τῇ ἐπιφάνειᾳ. It is more exactly described in *De Sensu* 3, 439 b 11 sq. ὥστε χρῶμα ἂν εἴη τὸ τοῦ διαφανοῦς ἐν σώματι ὁρισμένον πέρας. Colour makes and defines the surface of the body *quā* transparent, as figure defines it *quā* extended. Colour makes the transparent medium itself visible and its own varieties visible through the medium. White and black as colours in solid bodies correspond to the condition of light or darkness in air. A coloured object, then, is one which has the cause of its visibility within itself (ἐν ἑαυτῷ), as distinguished from transparent substances, air and water, through which we can see the colour of other bodies. As with these transparent substances, so with light and its correlative darkness, for light is the medium in active operation, while if the medium is in a state of potentiality, i.e. present but not working or actualised, there is darkness. If we see colour in the water, we suspect colouring matter or some other foreign cause. If we see the transparent medium, it is because there is something analogous to colour actually present in it (οἷον χρῶμα b 11, δι' ἀλλότριον χρῶμα b 5); not, however, as a coating on the surface, but as intrinsic and constitutive of the medium in activity.

**a 27.** χρῶμα μὲν, καὶ δ. For μὲν followed by καὶ Bonitz s.v. cites *Rhet.* II. 19, 1392 b 15 sqq., *Poet.* 3, 1448 a 31. Cf. Vahlen, *Beiträge* IV., p. 427. λόγῳ μὲν ἔστιν εἰπεῖν, "can be stated in words"; that is, a rational account can be given of it. It can be described, though it has as yet no name. The phrase shows how λόγος acquires a meaning which is frequent in A., that of rational description, something wider and vaguer than definition proper, cf. *Anal. Post.* II. 10,

94 a 11, *Metaφh.* 1043 b 23—26, where definition is decried by the Cynics as μακρὸς λόγος (cf. 1091 a 7—9). ἀνώνυμον δὲ. We call such objects phosphorescent. They are not seen in the light as coloured objects are, but in the dark; cf. 419 a 3.

a 28. προελθοῦσι, "if we proceed." There is no reference to a definite passage. The sense is that the progress of our enquiry will of itself clear up the point. For προελθοῦσι cf. 403 b 21.

a 29. τὸ γὰρ ὁρατὸν ἐστὶ χρῶμα. This is a hard saying. We have just been told that the nameless quality now known as phosphorescence is also visible, and this is fully borne out by a careful consideration of 418 b 2 sq., 419 a 1—6, 22 sq., where we are told that all colour is seen in the light and cannot be seen without light, but that not all that is visible is visible in the light, that certain things (i.e. phosphorescent objects) are visible only in the dark and then without their natural colour, while fire again is visible both in the light and in the dark. Moreover, A. himself admits elsewhere that colour and visibility are not convertible terms, *Phys.* III. 1, 201 b 3 ἐπεὶ δ' οὐ ταῦτόν, ὥσπερ οὐδὲ χρῶμα ταῦτόν καὶ ὁρατόν (cf. *Metaφh.* 1065 b 32), but there the context shows that this is a case of logical distinction and material identity. Colour is τῷ ὑποκειμένῳ one and the same with the visible, but differently conceived, λόγῳ ἑτερον. There is no trace of a different reading. Them., indeed, paraphrases (58, 23 H., 107, 8 Sp.) ὁρατόν δὲ λέγω πρῶτως τὸ χρῶμα, but afterwards (58, 26 H., 107, 14 Sp.) νῦν δὲ τοσοῦτον κείσθω τὴν πρῶτην, ὅτι τὸ ὁρατόν ἐστὶ χρῶμα. Simplicius seems to have expected τὴν γὰρ ὁρατόν, for (130, 6) he says ἀντὶ τοῦ τὴν ὁρατόν εἰρηται νῦν τὸ ὁρατόν. If we wanted to emend the text, we should welcome Essen's happy inspiration, which is very unlike the great majority of his unconvincing and somewhat arbitrary alterations. He puts a full stop after προελθοῦσι and continues μάλιστα γὰρ ὁρατόν κτέ. Thus A. is made consistent, and the proposal might seem to derive some slight support from Them.'s πρῶτως and from the fact that Philop. (320, 4), in his abbreviated citation δῆλον ἡμῖν ἔσται προελθοῦσι, stops short of μάλιστα. But the passage from the *Physics* should make us chary of alteration. Them. by his πρῶτως showed that he was conscious of the same difficulty in the text which Simpl. has noted: cf. Soph. 72, 26 δῆλον δὲ ἔσται ὃ λέγομεν προελθοῦσι μάλιστα. νῦν δὲ τὸ ὁρατόν κυρίως ἐστὶ χρῶμα. The fact is, A. has descended to popular modes of speech (cf. 425 b 18 sq.) and committed the fault which he censures 426 a 26. In the light of 421 b 5, 422 a 20 sq., 424 a 10, 425 b 21 sq. we may opine that he was just as inexact in the opening statement of this chapter. But he is bound by his method to put down half truths provisionally and correct or qualify them as he goes along. ἐπὶ τοῦ καθ' αὐτὸ ὁρατοῦ: that is, on the surface of the coloured body, τοῦ κεχρωσμένου. Simpl. 130, 8 τὸ κεχρωσμένον κατὰ τὸ χρῶμα καὶ τὸ λαμπρὸν κατὰ τὴν λαμπρότητα ὁράται. The comment of Simpl. would be more to the point if he had read κατ' αὐτὸ (=τὸ χρῶμα) instead of καθ' αὐτό. See *note* on a 26 ὁρατόν δ'. I understand ὅν, rather than κατηγορούμενον, with τὸ ἐπὶ τοῦ...ὁρατοῦ. In any case the surface of the coloured body is meant by τὸ καθ' αὐτὸ ὁρατόν. There is this difference between body and the surface of body that, while κεχρῶσθαι may be truly predicated of both, it is only of the surface that it is predicable καθ' αὐτὸ and πρῶτως. See *Tor.* v. 5, 134 a 18—25 and Waitz *ad loc.* "sic corpus dicitur album ὡς κατ' ἄλλο τι πρῶτον, κατὰ τὴν ἐπιφάνειαν· ταύτη γὰρ πρῶτως ὑπάρχει τὸ κεχρῶσθαι· ἡ δ' ἐπιφάνεια λέγεται κεχρῶσθαι ὡς πρῶτον αὐτό." The term coloured is applied to the body or coloured thing in virtue of its surface and so κατ' ἄλλο: *Phys.* IV. 3, 210 b 4 τὸ λευκὸν ἐν ἀνθρώπῳ ὅτι ἐν σώματι, καὶ ἐν τούτῳ ὅτι ἐν ἐπιφανείᾳ· ἐν δὲ ταύτῃ οὐκ ἐστὶ κατ' ἄλλο. At the same

time to be a surface and to be coloured are logically quite distinct: *ib.* 210 b 6 ἔρερά γε τῷ εἶδει ταῦτα, καὶ ἄλλην φύσιν ἔχει ἐκάτερον καὶ δύναμιν, ἥ τ' ἐπιφάνεια καὶ τὸ λευκόν. Cf. *Metaph.* 1029 b 13, where A. gives the first rough approximation to the *τί ἦν εἶναι* as *ὃ λέγεται καθ' αὐτὸ* and then corrects it thus: (b 16) οὐδὲ δὴ τοῦτο πᾶν· οὐ γὰρ τὸ οὕτως καθ' αὐτὸ ὡς ἐπιφάνεια λευκόν, ὅτι οὐκ ἔστι τὸ ἐπιφανεία εἶναι τὸ λευκῷ εἶναι. In the next sentence of our present passage A. enforces a similar distinction between *τὸ ἐπιφανεία εἶναι* and *τὸ ὁρατῷ εἶναι*: to be a surface and to be visible are logically distinct.

a 30. καθ' αὐτὸ δὲ [int. ὁρατοῦ] οὐ τῷ λόγῳ. What is here meant by καθ' αὐτὸ is afterwards expressed by *τὸ οἰκεῖον*, as opposed to *τὸ ἀλλότριον*, *χρῶμα* 419 a 2, 6. The meanings excluded are those exemplified in *Metaph.* 1022 a 25 ἐν μὲν γὰρ καθ' αὐτὸ τὸ τί ἦν εἶναι ἐκάστω, οἷον ὁ Καλλίας καθ' αὐτὸν Καλλίας καὶ τὸ τί ἦν εἶναι Καλλία· ἐν δὲ ὅσα ἐν τῷ τί ἐστὶν ὑπάρχει (i.e. the essential marks), οἷον ζῶον ὁ Καλλίας καθ' αὐτόν. ἐν γὰρ τῷ λόγῳ ἐνυπάρχει τὸ ζῶον· ζῶον γάρ τι ὁ Καλλίας. ἔτι δὲ εἰ ἐν αὐτῷ δέδεκται πρῶτον ἢ τῶν αὐτοῦ τινί, οἷον ἡ ἐπιφάνεια λευκὴ καθ' αὐτήν, καὶ ζῆ ὁ ἀνθρώπος καθ' αὐτόν· ἡ γὰρ ψυχὴ μέρος τι τοῦ ἀνθρώπου, ἐν ᾧ πρῶτη τὸ ζῆν. Thus *ὁρατὸν* is not (1) the *τί ἦν εἶναι* of the surface or coloured thing nor (2) one of its essential marks nor (3) the logical subject necessarily implied in its definition, as number is implied in any definition of odd or even, or surface in any definition of white colour. The relation of visibility to the surface of a body or other *κεχωρισμένον τι* here denoted by *τὸ καθ' αὐτὸ ὁρατὸν* might be compared to that between unity and being, of which A. says *Metaph.* 1003 b 22 εἰ δὴ τὸ ὄν καὶ τὸ ἐν ταῦτὸ καὶ μία φύσις τῷ ἀκολουθεῖν ἀλλήλοις ὥσπερ ἀρχὴ καὶ αἶτιον, ἀλλ' οὐχ ὡς ἐνὶ λόγῳ δηλούμενα κτέ.

a 31. κινήτικόν, "capable of exciting motion," not, however, local movement, *φορά*, but qualitative change, *ἀλλοίωσις*. In this respect vision differs from the other senses, *De Sensu* 6, 446 a 20—447 a 10. This limitation of "motion" or "perturbation" must be remembered when Grote says, pp. 465 sq., 2nd edition (II., pp. 198 sq., 1st edition): "colour operates upon the eye...by causing movements or perturbations in the external intervening medium, air or water, which affect the sense through an appropriate agency of their own. The eye is of watery structure, apt for receiving the impressions." Cf. *De Sensu* 2, 438 b 3 ἀλλ' εἴτε φῶς εἴτ' ἀήρ ἐστὶ τὸ μετὰ τοῦ ὁραμένου καὶ τοῦ ὀφθαλμοῦ, ἢ διὰ τούτου κίνησις ἐστὶν ἢ ποιούσα τὸ ὁρᾶν.

418 b 1. τοῦ κατ' ἐνέργειαν διαφανοῦς: that is, "the medium in a state of activity." This, as we shall see below, is light.

b 2. οὐχ ὁρατὸν ἄνευ φωτός. This comes in somewhat prematurely, as it is only in the next section that A. tells us that light is *τὸ κατ' ἐνέργειαν διαφανές*. Cf. 419 a 7—9 and *notes*.

b 3. ἐν φωτὶ. The preposition is primarily significant of the environment, but as this is a *sine quâ non* (οὐδ' οὐκ ἄνευ), it comes to be at the same time instrumental.

b 5. ὡς ἀπλῶς εἰπεῖν, "to speak without qualification," i.e. in the unrestricted sense of the term καθ' αὐτό. See second *note* on 417 a 21. δι' ἀλλότριον χρῶμα. According to Philop. 322, 31 sq., the cause intended is light, which below is said to be οἷον χρῶμα τοῦ διαφανοῦς: to be quite accurate, we need to insert some qualifying word like οἷον here. The fact which A. has before him is that air or water, in order to be seen, must be illuminated. In themselves colourless, their transparent bodies take on the colour of the light in which they are seen. For the extension of this theory cf. *De Sensu* 2, 3, 439 a 18—439 b 16 and Alexander's Commentary on the *De Sensu* (45, 17 W., 95, 8 Th.) δέχεται δὲ τὸ φῶς τὰ ἀόριστα διαφανῆ τῷ μὴ ἔχειν οἰκεῖον χρῶμα· τὰ

γὰρ ἀόριστα, ὥσπερ τὸ πέρασ ἴσχει παρ' ἄλλου οὐκ ἔχοντα οἰκεῖόν τε καὶ ὠρισμένον, οὕτω δὲ καὶ τὰ χρώματα. δι' οὗ δὴ ταῦτα φαίνεται, τοῦτο δὲ ἰδίως καλοῦμεν διαφανές, cf. (45, 13 W., 95, 3 Th.) ὃν δὴ τοῦτο [i.e. φῶς] χρώμα, ταῦτα ἰδίως διαφανῆ.

b 6. ἀήρ καὶ ὕδωρ καὶ πολλὰ τῶν στερεῶν. Instances of solid bodies which are (more or less) transparent are glass, certain crystals, and other translucent stones, horn, tortoise-shell. According to *De Sensu* 3, 439 b 8, all bodies have some measure of transparency on their surface as a necessary condition of colour: τὸ ἄρα διαφανές καθ' ὅσον ὑπάρχει ἐν τοῖς σώμασιν (ὑπάρχει δὲ μᾶλλον καὶ ἥττον ἐν πᾶσι) χρώματος ποιεῖ μετέχειν. But air, water and the other bodies properly and commonly called transparent (τὰ ἰδίως διαφανῆ) are distinguished as transparent through and through (δι' ὅλου) and are called by Alexander *διοπτὰ* (45, 12 W.).

b 8. ἐστὶ φύσις. In *De Sensu* 3, 439 a 23 κοινὴ φύσις καὶ δύναμις, ἡ χωριστὴ μὲν οὐκ ἔστιν, ἐν τούτοις δ' ἔστι: that is, an inseparable attribute, like number. Alex. calls it *διαφάνεια* (44, 1 W.). As often, *φύσις* implies objectivity. It is a property in the bodies in question, and not something subjective such as the theory of the Atomists made colour to be. ἐν τούτοις ἀμφοτέροις, i.e. air and water. Both these bodies (and the other bodies mentioned in *De Sensu* 3, 439 a 21—25) have in them the transparent, the medium which with its normal activity gives us light, and with its special states colours.

b 9. ἐν τῷ αἰθέρι τῷ ἄνω σώματι. Elsewhere called *αἰθήρ* (the word, according to A., being derived from *αἰεθεῖν*). It is a form of matter peculiar to the celestial region and distinct from all the elements known in this sublunary region on and immediately around (cf. *Meteor.* I. 3, 340 b 6) the earth, one of its distinctive qualities being circular motion, *De Caelo* II. 3, 286 a 10—12: cf. *ib.* I. 3, 270 b 11 sqq., where it is called ἡ πρώτη οὐσία τῶν σωμάτων and τὸ πρῶτον σῶμα, ἔτερόν τι δὲ παρὰ γῆν καὶ πῦρ καὶ ἀέρα καὶ ὕδωρ. The stars themselves, as Philop. remarks (324, 18), are not transparent, for one star can occult another, but the various spheres in which A. supposed the heavenly bodies to be fixed are transparent. Yet at the same time A. thought it reasonable to believe that the stars were composed of the aether in which they moved (*De Caelo* II. 7, 289 a 13), and, as he admits many varieties of the aether, probably some were less transparent than others.

b 10. ἢ διαφανές, int. ἐστὶ, "in so far as it is transparent," "quā transparent"; that is, light is the active operation of the transparent as such, i.e. not as air, nor as water, nor as aether, but as transparent. δυνάμει. Placed thus before the relative for emphasis but going with ἐστὶ to complete the predication, an instance of true hyperbaton used, as Newman holds (see p. 211 sq. *supra*), for emphasis. τοῦτ', int. τὸ διαφανές. καὶ τὸ σκότος: more fully thus, ἐν ἐκείνῳ καὶ τὸ σκότος ἐστὶ. Cf. *infra* 418 b 18—20, b 29—419 a 1. If instead of σκότος we had had the adjective *σκοτεινόν*, I should have been tempted to understand ἐν ᾧ as ἐν ᾧ χρόνῳ like *ὅταν* in b 11, b 30. Wherever light is potentially, darkness is actually; hence, too, where light is actually, darkness is potentially. The medium must have one or the other, the *ἔξις*, light, or the *στέρησις*, darkness: ἐστὶ μὲν οὖν ἐνεῖναι ἐν τῷ διαφανεῖ τοῦτ' ὅπερ καὶ ἐν τῷ ἀέρι ποιεῖ φῶς, ἐστὶ δὲ μή, ἀλλ' ἐστερηθῆναι, *De Sensu*, 3, 439 b 14—16. Cf. Philop. 341, 10—18, *Simpl.* 133, 2—21 and *Them.* 59, 26—33 H., 109, 7—17 Sp., from which last passage we may cite ἐν οἷς οὖν δυνάμει τὸ φῶς, ἐν τούτοις ἐστὶ καὶ τὸ σκότος: οὐδὲν γὰρ ἄλλο ἐστὶ τὸ σκότος ἢ τὸ δυνάμει διαφανές, τὸ δὲ φῶς ἐντελέχειά τις καὶ τελειότης τοῦ διαφανοῦς ἢ διαφανές. All three are careful to tell us that this holds of our sublunary region only, the celestial region is always light: τὸ μὲν οὖν θεῖον σῶμα αἰεὶ διαφανές ἐνεργείᾳ· αἰεὶ γὰρ αὐτῷ πάρεστι καὶ τὸ φῶς.

**b 11.** τὸ δὲ φῶς οἷον χρῶμα. In *De Sensu*, c. 3, recapitulating and referring to this passage, A. says (439 a 18) ἐστὶ χρῶμα τοῖ διαφανοῖς κατὰ σιμμετρίαν· ὅταν γὰρ ἐνῇ τι πυρῶδες ἐν διαφανεί, ἢ μὲν παρουσία φῶς, ἢ δὲ στήρησις ἐστὶ σκότος (cf. 418 b 18—20), and 439 b 1 φαίνεται δὲ καὶ ἀήρ καὶ ὕδωρ χρωματίζόμενα· καὶ γὰρ ἡ αὐγὴ τοιοῦτόν ἐστιν. By αὐγή is meant the sheen or brightness of air and sea, which present a series of shifting hues rather than a constant colour. The *De Sensu* makes the difference between colour and light to depend ultimately upon this, that the extremity of bodies, which have a limit of their own to bound them, is receptive of, and necessary to, colour, while bodies which have no such limit of their own have light. The one class have colour of their own and have it in their bounding surface. The others, in particular air and water, have no colour and, properly speaking, no bounding surface of their own; cf. also Alex. Aphr. on *De Sensu* (44, 18 W., 93, 7 Th.) ἐστὶ δὲ καὶ τὸ πέρασ αἰτοῦ ἐπιφάνεια τοιαύτη κεχρωσμένη, ὡς εἶναι, καθὼ μὲν σῶμα, τὴν ἐπιφάνειαν αἰτοῦ πέρασ, καθὼ δὲ τοιόνδε καὶ διαφανές, τὸ χρῶμα. In short, light is in the transparent medium what colour is in body.

**b 13.** ἐν καὶ ταυτόν. The sentence is incomplete. καὶ τούτῳ = καὶ τῷ ἄνω σώματι: and with ἐν καὶ ταυτόν must be understood καὶ τῷ πυρὶ: that is, "for aether also has some quality identical with that in fire," more literally, "for to this also as well as to fire belongs (ὑπάρχει) one and the same attribute." Perhaps this common attribute may be described as illuminative, τὸ φωτίζον, for aether does not, like terrestrial fire, consume and destroy. Trend. is inexact in explaining ἐν καὶ ταυτόν as igni simile or "fiery," for fire is one of the things with which aether is itself co-ordinated, and *Meteor.* I. 3, 339 b 22, to which he appeals, merely states that Anaxagoras held aether to have received its name from a belief in its identity with fire: ἦν Ἀναξαγόρας μὲν τῷ πυρὶ ταυτόν ἡγήσασθαι μοι δοκεῖ σημαίνειν. τί μὲν οὖν... 14 εἴρηται. Having given his own view, A. casts a glance upon current views which are excluded by it, especially (1) that light is fire or akin to fire (as was held by Empedocles and Plato), (2) that light is something corporeal emitted from the surface of bodies (Democritus).

**b 14.** οὔτε πῦρ. Cf. Plato, *Tim.* 45 B—46 B. Plato does not say in so many words that light is fire, but he explains vision as due to a stream of clear and subtle fire issuing from the eyes, of the same substance as the sunlight in the air, with which it mingles, the two combined then meeting the fire proceeding from the object seen. This at any rate suggests that fire and light are identical. οὐδ' ὅλως σῶμα, "nor a body at all," as it would be if it were fire (which the ancients regarded as an element or uncompounded body), and as in any case it must have been in the view of Democritus.

**b 15.** οὐδ' ἀπορροή. This view, that light is an emanation, is attributed to Empedocles in *De Sensu* 2, 437 b 23 Ἐμπεδοκλῆς δ' εἶκε νομίζοντι ὅτε μὲν ἐξίόντος τοῦ φωτός... βλέπειν. Then, after citing the famous lines in which the structure of the eye is compared by Empedocles to a lantern, A. continues (438 a 4) ὅτε δὲ ταῖς ἀπορροαῖς ταῖς ἀπὸ τῶν ὁραμένων [int. ὁρᾶν φησίν]: cf. Theophr. *De Sensibus* § 7 (Diels, *Dox. Gr.* 500, 28) φέρεσθαι δὲ (Ἐμπεδοκλῆς λέγει) τὰ χρώματα πρὸς τὴν ὄψιν διὰ τὴν ἀπορροήν. The supposition of emanations is in full accord with Empedocles' distinctive doctrine of perception through pores or channels. Cf. Plato, *Meno* 76 C, D, *De Gen. et Corr.* I. 8, 324 b 26—35, cited in note on 418 b 20 below.

**b 16.** πῦρ δὲ τοιοῦτον τινὸς παρουσία. This cannot mean the local presence of fire as of something material. For A. has just denied that light is a body at all. Nor has the light exactly the relation of form to the transparent regarded

as matter or substratum. The fire, which is the source of light, is not immanent in the transparent. It is not the illumining fire but the transmitted influence of the fire which actualises the medium and converts it from darkness into light. See 418 b 11—13 and *notes*. Them. explains "presence" as a mere relation: 60, 22 H., 110, 25 Sp. *σχέσις τοῦ παρόντος πρὸς ἐκείνο, ᾧ πάρεστι*. Plato uses *παρουσία* of colour, *Lysis* 217 C—E, in a very similar manner, and this may have suggested the term to A. for light. Cf. *De Sensu* 3, 439 a 20, the presence of something fiery constitutes light and its absence darkness.

**418 b 18—419 b 3.** Darkness is commonly thought to be the contrary of light; the fact is that light is the presence of a positive quality in the medium, darkness its mere absence or privation. Empedocles assumed motion of light, motion so rapid as to escape observation, an assumption legitimate perhaps if the distance were short, but not justified if light travels the whole distance from East to West [§ 3]. The medium that is to receive colour must itself be colourless, and the potentially transparent satisfies this condition, as also does that which is invisible or scarcely visible, like dusk. Some objects, namely those which are phosphorescent, are seen, not in the light, but in the dark, but in this case it is not the colours which are seen [§ 4]. That which is seen in daylight is colour, and this can stimulate motion in the transparent medium, viz. air, which extends continuously between the visible object and the eye. An object in contact with the eye is not visible. A medium of some sort reaching to the eye is essential to account for vision [§ 5]. If there were a void between eye and object, vision, and *a fortiori* accurate vision, of a minute and distant object would (*pace* Democriti) be impossible [§ 6]. Fire is seen both in the light and in the dark, naturally, as being the necessary condition of the actualisation of the transparent medium [§ 7]. A medium intervening between the object and the organ is, as will hereafter appear, indispensable in the case of all senses [§§ 8, 9].

**418 b 18.** *δοκεῖ τε...ἐναντίον*. "This [viz. A.'s] explanation of light is confirmed by the ordinary view which regards light as the opposite of darkness" (Wallace). And so Philoponus (344, 13) *εἰ γὰρ τὸ σκότος ἀντίκειται τῷ φωτί, τὸ δὲ σκότος οὐδὲν ἄλλο ἐστὶν ἢ στέρησις φωτός (οὐ γὰρ γινομένου τινὸς ἐν τῷ ἀέρι γίνεται τὸ σκότος, ἀλλὰ μόνον τῇ τοῦ φωτός ἀπουσίᾳ), τὸ δὲ ἀντικείμενον τῇ στέρησει ἔξις ἐστὶ, τὸ φῶς ἄρα ἔξις ἐστὶ τῆς τοιαύτης δυνάμεως ἐν τῷ διαφανεί, καὶ οὐ σώμα*. Darkness is the privation of the *ἔξις* described, which explains why the presence of this *ἔξις* in the diaphanous medium is light. From 417 a 22—b 16 we learn that *ἔξις* stands to *στέρησις*, e.g. knowledge to ignorance, as actual operation to mere potency. The medium, when illumined, is raised from its dormant state.

**b 19.** *στέρησις τῆς τοιαύτης ἔξεως ἐκ διαφανοῦς*. By *τοιαύτης* is meant the condition of active operation as such (*ἐνέργεια*, cf. 418 b 9): *ἐκ διαφανοῦς* is attached to *στέρησις* to denote the absence of this condition from the transparent. The exact force of the preposition is seen from 417 a 31 *ἐξ ἐναντίας μεταβαλὼν ἔξεως*, *zδ.* a 32 *ὁ δ' ἐκ τοῦ ἔχειν τὴν αἰσθησιν ἢ τὴν γραμματικὴν, μὴ ἐνεργεῖν δέ, zδ.* b 9 *τὸ μὲν οὖν εἰς ἐντελέχειαν ἄγον ἐκ δυνάμει ὄντος*, and b 12 *τὸ δ' ἐκ δυνάμει ὄντος μανθάνων*, where a change from a former state is meant. Here, too (418 b 19), the construction is the same, *στέρησις* being regarded as (417 b 15) *ἢ ἐπὶ τὰς στέρητικὰς διαθέσεις μεταβολή*.

**b 20.** *ἡ τοῦτου παρουσία*: obviously for *ἡ τῆς τοιαύτης ἔξεως παρουσία*. See *note* on 418 a 17 *ἐκάστου*. 'Ἐμπεδοκλῆς, οὐδ' εἰ τις ἄλλος. More fully *De Gen. et Corr.* I. 8, 324 b 26 *τοῖς μὲν οὖν δοκεῖ πάσχειν ἕκαστον διὰ τινων πόρων εἰσιόντος τοῦ ποιούντος ἐσχάτος καὶ κυριωτάτου, καὶ τοῦτον τὸν τρόπον καὶ ὁρᾶν καὶ ἀκούειν ἡμᾶς φασὶ καὶ τὰς ἄλλας αἰσθήσεις αἰσθάνεσθαι πάσας, ἔτι δὲ ὁρᾶσθαι διὰ τε ἀέρος*



καὶ ὕδατος καὶ τῶν διαφανῶν, διὰ τὸ πόρους ἔχειν ἀοράτους μὲν διὰ μικρότητα, πυκνοὺς δὲ καὶ κατὰ στοίχον, καὶ μᾶλλον ἔχειν τὰ διαφανῆ μᾶλλον. οἱ μὲν οὖν ἐπὶ τινῶν οὕτω διώρισαν, ὥσπερ καὶ Ἐμπεδοκλῆς, οὐ μόνον ἐπὶ τῶν ποιούντων καὶ πασχόντων ἀλλὰ καὶ μίγνυσθαι φησιν ὅσων οἱ πόροι σύμμετροι πρὸς ἀλλήλους εἰσίν. Visible bodies, according to Empedocles (cf. Plato, *Μενο* 76 C.), give off emanations which enter the pores of the eye. Light, if visible, must be such an emanation from the sun and stars. In vision the visual ray was supposed to issue forth from the eye in order to come in contact with the emanations of the object. Empedocles thus compared the eye to a lantern 'see *frag.* 84 D, *De Sensu* 2, 437 b 26 sqq.). The fire in the centre of the eye, the pupil, or lens, is surrounded by membranes or coatings, and darts out through these membranes and the watery part of the eye, presumably to meet the emanations of luminous bodies. See Theophr. *De Sensibus* §§ 7, 8 (*Doxogr. Gr.* 500, 19--501, 11). Empedocles, then, held light to be a corpuscular emanation from luminous bodies, which had to travel over the intervening space before it reached the eye. Thus sunlight traversed the space between the sun and the earth before it could reach the earth: *De Sensu* 6, 446 a 26 sqq. cited *infra* in note on b 22, γιγνομένου; also *ib.* 3, 440 a 15 sqq. To the same effect Philop. (344, 34) Ἐμπεδοκλῆς, ὃς ἔλεγεν ἀπορρέον τὸ φῶς σῶμα ὃν ἐκ τοῦ φωτίζοντος σώματος. In *εἰ τις* Philop. (345, 11) sees a reference to Plato *Τίμ.* 58 C. The view of the Atomists, which postulates motion of the corpuscular emanation, if not of light, will occupy us below, 419 a 15.

b 21. εἰρηκεν, ὡς φερομένου τοῦ φωτός, "has said that light travels"; the construction of ὡς with the genitive absolute after a verb of saying is very common. More is told us of this view in *De Sensu* 6, 446 a 26 sqq., which I translate. A. asks if the perception of the visible and of light agrees with the perception of other sensibles, viz. in being gradually transmitted from one point of space to another, and then continues: "Empedocles, for instance, says that the light from the sun reaches the intervening space before it reaches the eye or the earth. And this might well seem to be the fact. For, when a thing is moved, it is moved from one place to another, and hence a certain time must elapse during which it is being moved from the one place to the other. But every period of time is divisible. Hence there was a time when the ray was not yet seen, but was being transmitted through the medium." A. of course rejects this theory: see *De Sensu* 6, 446 b 27. Light is to him not a κίνησις κατὰ τόπον or φορά, but an ἀλλοίωσις, a qualitative change, of the transparent medium.

b 22. γιγνομένου. With Torstrik and Diels (*Vors. Fr.* 170, 38) I adhere to the vulgate, although τεινόμενου, the reading of E, is supported by V and vet. transl. Cf. Them. 60, 28 H., 111, 6 Sp. ὡς κινουμένου τοῦ φωτός καὶ γιγνομένου πρῶτον μεταξὺ τῆς γῆς, εἰθ' οὕτω πρὸς τὴν γῆν, which is very similar to the citation from *De Sensu* below, Philop. 344, 34 ὃς [Empedocles] ἔλεγεν ἀπορρέον τὸ φῶς σῶμα ὃν ἐκ τοῦ φωτίζοντος σώματος γίνεσθαι πρῶτον ἐν τῷ μεταξὺ τόπῳ τῆς τε γῆς καὶ τοῦ οὐρανοῦ. The confusion of T and Γ in uncial MSS. is notorious. The difficulty of understanding τεινόμενου is increased by the juxtaposition of ποτέ. This appears from the parallel passage *De Sensu* 6, 446 a 25—b 2 which serves as a commentary on the present passage: ἀρ' οὖν οὕτω καὶ τὸ ὁρώμενον καὶ τὸ φῶς; καθάπερ καὶ Ἐμπεδοκλῆς φησὶν ἀφικνεῖσθαι πρότερον τὸ ἀπὸ τοῦ ἡλίου φῶς εἰς τὸ μεταξὺ πρὶν πρὸς τὴν ὕψιν ἢ ἐπὶ τὴν γῆν. δόξειε δ' ἂν εὐλόγως τοῦτο συμβαίνειν· τὸ γὰρ κινούμενον κινεῖται ποθέν ποι, ὥστ' ἀνάγκη εἶναι τινα καὶ χρόνον ἐν ᾧ κινεῖται ἐκ θατέρου πρὸς θάτερον. ὁ δὲ χρόνος πᾶς διαμετέρος, ὥστε ἦν ὅτε οὐπω ἑώρατο ἀλλ' ἔτ' ἐφέρετο ἢ ἀκτὶς ἐν τῷ μεταξὺ. Cf. A.'s reply 446 b 27 τῷ εἶναι γάρ

τι φῶς ἐστίν, ἀλλ' οὐ κίνησις. ὅλως δὲ οὐδὲ ὁμοίως ἐπὶ τε ἀλλοιώσεως ἔχει καὶ φορᾶς· αἱ μὲν γὰρ φοραὶ εὐλόγως εἰς τὸ μεταξύ πρῶτον ἀφικνουῦνται (δοκεῖ δ' ὁ ψόφος εἶναι φερομένου τινὸς κίνησις), ὅσα δ' ἀλλοιούται, οὐκέτι ὁμοίως· ἐνδέχεται γὰρ ἀθρόον ἀλλοιοῦσθαι, καὶ μὴ τὸ ἥμισυ πρότερον, οἷον τὸ ὕδωρ ἅμα πᾶν πύγνυσθαι. These extracts lead us to expect that the word before ποτέ should bear the meaning of ἀφικνουμένου or ἀφικμένου: γίγνεσθαι certainly bears this meaning: possibly τείνεσθαι could also. Torstrik raised the interesting question whether τεινομένου was an Empedoclean word, "ut sit lux quasi σειρὴ χρυσεῖη." On the affirmative side M. Rodier cites Alex. Aphr., who, commenting upon Emped. frag. 84, 5 D, in *De Sensu* 2, 437 b 30 ταναώτερον [int. πῦρ], "finest or most subtle fire," remarks (23, 21 W) ταναὸν δὲ τὸ πῦρ [φησὶ] τὸ διὰ λεπτότητα τεινομένον τε καὶ διεκπίπτειν διὰ τῶν πυκνῶν δυνάμενον, Aet., *Plac.* VI. 14 (Diels, *Doxogr. Gr.* 405, 16) φέρεσθαι μὲν γὰρ τὴν ὄψιν τεταμένην ὥς ἐπὶ τὸν χαλκόν, ἐντυχούσαν δὲ πυκνῇ καὶ λείῃ πληχθεῖσαν ὑποστρέφειν αὐτὴν ἐφ' ἑαυτὴν κτέ. For τείνεσθαι of light see Jebb's note on *Ant.* 600 and *Phil.* 831; and of sound *Ant.* 124. When we consider the use of τείνειν and ἐκτείνειν with μακρὰν in tragedy (e.g. μὴ τείνε μακρὰν, μακρὰν ἔτεινας, μακρὰν ἂν ἐξέτεινα sim.) where it is practically a verb of motion, it would not be surprising if Empedocles used τείνεσθαι=φέρεσθαι. A. himself so uses ἀποτείνεισθαι, e.g. *De Sensu* 2, 438 a 25 ἄλογον δὲ ὅλως τὸ ἐξιώντι τινὶ τὴν ὄψιν ὄραν, καὶ ἀποτείνεισθαι μέχρι τῶν ἀστρῶν (v. *Ind. Ar.* 86 b 60 s.v.): "and, speaking generally, that the eye should see by something issuing from it and that the visual ray should reach as far as the stars, is unreasonable."

b 22. ποτέ. In *De Sensu* 6, 446 b 1 sqq. (cited in last note) A. says "there was a time when the ray was not yet seen, but was still on its way in the intervening space." Here he says that the sunlight travels and arrives at some time or other in the space between earth and heaven. μεταξύ τῆς γῆς καὶ τοῦ περιέχοντος. The meaning of the word μεταξύ must not be pressed. The light reaches the eye from the sun, moves from East to West, and this motion takes place ἐν τῷ περιέχοντι, "in that which surrounds or encircles." Περιέχον denotes here not, as in 404 a 10, 411 a 19, the circumambient air, but the sky, *Ind. Ar.* 581 a 22 de extremis mundi finibus, e.g. *De Caelo* III. 5, 303 b 12. According to Empedocles the world was surrounded by a hollow sphere or rather two hemispheres, the one bright, the other dark, see Plut., *Plac.* II. 11 (Diels, *Doxogr. Gr.* 339, 16).

b 23 παρὰ τὴν...24 τὰ φαινόμενα. Theory, λόγος, and facts, φαινόμενα, as in 414 a 24: also *De Invent.* 4, 469 a 23 κατὰ μὲν οὖν τὰ φαινόμενα...ἰθ. a 28 κατὰ δὲ τὸν λόγον, *De Sensu* 1, 436 b 7 δῆλον καὶ διὰ τοῦ λόγου καὶ τοῦ λόγου χωρὶς. A. of course rejects the spatial motion of light (see *De Sensu* 6, 446 b 27 cited above), because to him light is not a φορὰ but an ἀλλοίωσις of the transparent medium.

b 26. μέγα λίαν τὸ αἴτμα. A quasi-proverbial expression. Cf. the oracle in Herodotus I. 66 Ἀρκαδίην μ' αἰτεῖς; μέγα μ' αἰτεῖς· οὐ τοι δώσω. Apparently τὸ αἴτμα is in apposition to τὸ λαμβάνειν.

b 26 ἔστι δὲ...27 τὸ ἄσφοον. Philop. says (345, 17 sqq.: cf. *Simpl.* 134, 31—34) that this is because the admixture of any colour in the medium would prevent it from receiving colours in their purity. This principle, that the recipient must be neutral to the qualities it receives, is applied to all the senses in succession and to the mind (429 a 15—26).

b 28. τὸ ἀόρατον ἢ τὸ μάλιστ' ὁρώμενον. There are many degrees of obscurity from twilight to total darkness. Cf. 425 b 20 sqq., 426 b 1 sq.

b 29. τοιοῦτον δὲ, int. σκοτεινόν, "dusky," "obscure."

b 30. ἀλλ' ὅταν δυνάμει, int. διαφανές, i.e. the medium is potentially transparent when there is not present the necessary condition of its conversion from dark to light.

419 a 1. οὐ πάντα δὲ. It must not be supposed however that light is in all cases the necessary condition that objects may be visible. It is only the condition in order that they may show their colour. Cf. Them. 61, 9 H., 112, 3 Sp.) οὐ πάντα δὲ τὰ ὁρατὰ ἐν φωτὶ ὁρατά, ἀλλὰ τὸ μὲν οἰκείον ἐκάστου χρῶμα ἐν φωτὶ μόνον. Some things, e.g. the phosphorescent objects about to be described, carry their own medium with them, enough to show brightness and be visible, but not enough to show colour. See also second note on a 7 *infra*.

a 3. τὰ πυρώδη φαινόμενα καὶ λάμποντα. A. here defines the class of visibles besides colours for which he has no name (418 a 27), namely things which present a fiery and luminous appearance.

a 5. κέρας. A similar account of such objects is given in *De Sensu* 2, 437 a 31 sqq.: (437 b 5) "for smooth objects glow normally in the dark,...the heads of certain fish, for instance, and the ink of the cuttle-fish."

a 7. ἄλλος λόγος. Philop. (348, 11) refers to the *De Sensu* for a statement to the effect that πέφυκεν ὁ ἀὴρ ὑπὸ τοῦ λαμπροῦ φωτίζεσθαι, οἷά ἐστι τὰ οὐράνια. But no such words occur in the *De Sensu*, and Bonitz, who (*Ind. Ar.* 99 a 12) refers to *De Sensu* 2, 437 b 5, has taken care to mark the reference as dubious.

a 7 νῦν δ'...9 ἀνεκ φωτός. If, then, we exclude phosphorescent objects, which do not show colour in the dark, the relation between light and colour is this, that light is the indispensable condition in order that a colour or a coloured object may be seen. In this sense A. can say *De Sensu* 6, 447 a 11 τὸ φῶς ποιεῖ τὸ ὁρᾶν. Our next sentence explains how this is.

a 9 τοῦτο γὰρ ἦν...11 φῶς ἐστίν. It is the nature of colour to excite or stimulate the transparent medium, provided it is transparent in actuality, i.e. has been illuminated: for light is the actuality or positive determination of the transparent medium. When the transparent is not actualised, we have darkness, when it is actualised, we have light, and when the latter is the case colour can act upon the eye. ἦν, "is, as we saw," viz. 418 a 31—b 2.

a 11. τούτου, viz. of the whole theory that that which is seen in light is colour, and light is the active operation of a medium called the transparent. That such a medium is indispensable to account for light and vision is evidenced by the experiment now to be mentioned.

a 12. ἐπ' αὐτὴν τὴν ὄψιν, "on the organ of sight." Cf. 423 b 22 ἐπὶ τοῦ ὀφθαλμοῦ...τὸ ἔσχατον. The ambiguity noticed above (417 a 3) in the use of αἴσθησις for sense-organ as well as for faculty thus recurs in the case of ὄψις: cf. *Ind. Ar.* 553 b 51.

a 13. οὐκ ὄψεται. The subject, ὁ ὄρων, is not expressed. Cf. note on 403 a 22. ἀλλὰ, "in fact," used simply because of the negative οὐκ ὄψεται preceding.

a 14. συνεχούς, "continuous." This excludes not only the hypothesis of Democritus, next criticised, but also that of Empedocles, who held that light or, as he called it, "fire" made its way through the intervening air and entered the organism by the pores. Cf. Plato, *Meno* 76 c, d. This condition of continuity justifies us in calling the transparent a medium.

a 15. Δημόκριτος. Democritus explained the perceptions of sight, as Empedocles did, by the hypothesis that emanations or films (δείκελα) fly off from visible things, which emanations retain the form of the things; these images are reflected in the eye and are thence diffused throughout the whole body; thus arises vision. But as the space between the objects and our eyes is

filled with air, the images that fly off from things cannot themselves reach our eyes; what does so is the air which is moved by the images as they stream forth and receives an impression of them. Therefore it is that the clearness of the perception decreases with distance, the image is blurred, and, as at the same time emanations are going out from our eyes, the image of the object is also modified by these. Cf. *De Sensu* 2, 438 a 5 sqq., Theophr. *De Sensibus* 50 (Diels, *Doxogr. Gr.* 513, 17) ὁρᾶν μὲν οὖν ποιεῖ τῇ ἐμφάσει· ταύτην δ' ἰδίως λέγει· τὴν γὰρ ἔμφασιν οὐκ εὐθὺς ἐν τῇ κόρῃ γίνεσθαι, ἀλλὰ τὸν ἀέρα τὸν μεταξὺ τῆς ὀφθαλμοῦ καὶ τοῦ ὁρωμένου τυποῦσθαι συσσελλόμενον ὑπὸ τοῦ ὁρωμένου καὶ τοῦ ὁρώοντος· ἀπαντος γὰρ αἰεὶ γίνεσθαι τινα ἀπορροήν· ἔπειτα τοῦτον στερεὸν ὄντα καὶ ἀλλόχρων ἐμφαίνεσθαι τοῖς ὁμασιν ὑγροῖς· καὶ τὸ μὲν πυκνὸν οὐ δέχεσθαι τὸ δ' ὑγρὸν διέναι and Alex. *De Sensu* 124, 6 W τῆς δ' αὐτῆς δόξης καὶ Δημόκριτός ἐστι καὶ πάντες καθ' οὓς ἀπὸ τῶν ὁρατῶν ἀπορρέον τι φέρεται πρὸς τὴν ὄψιν.

a 16. εἰ γένοιτο κενόν, i.e. if the air, which in fact fills the space intervening between the eye and a visible object, were removed. Greater clearness of perception would then be attainable, because the emanations from objects (δείκελα) would not be obstructed in their course, but would reach the eye directly. As it is, according to Democritus (see last note), they are liable to disintegration or distortion after they fly off from the surface of the visible object, and besides do not themselves reach the eye at all.

a 17 πάσχοντος γὰρ τι...18 τὸ ὁρᾶν. An instructive remark, affording a summary explanation of the Aristotelian theory of sense-perception. For πάσχοντος τι compare 416 b 33, where it is stated of perception generally that it occurs ἐν τῷ κινεῖσθαι τε καὶ πάσχειν. In the case of vision the action of the visible object upon the faculty is not direct and immediate, hence we are bound to assume a medium.

a 21. οὐχ ὅτι. A well-known idiom, best explained as οὐ (λέγω) ὅτι ἀκριβῶς (δοθῆσεται). Here οὐχ ὅτι puts the case aside: we shall not see the object at all, *a fortiori* we shall not see it exactly.

a 22 δι' ἣν μὲν οὖν...23 εἴρηται, viz. because action upon the sensitive organ is a necessary condition of sensation; visible colour cannot directly act upon the organ, but only through a medium, and this medium actively operant is light; cf. 419 a 17 sqq.

a 23. πῦρ. This constitutes a third class of visible objects. Philop. (348, 10 sqq.) points out that the sun, as the source of daylight, constitutes a fourth class. Like colours, the sun cannot be seen in the dark, but for a different reason. Colours cannot be seen without daylight; the sun cannot be seen in the dark because where he is, it is not dark, and where it is dark, there he is not! Cf. *Simpl.* 129, 3 sqq. who first enumerates visible objects and then rearranges thus, (1) light, (2) coloured objects, (3) phosphorescent objects, (4) fire and sunlight.

a 25. ὁ δ' αὐτὸς λόγος, "of sound and of smell the same may be said as of sight." There is no direct contact of the object perceived with the sense-organ. The object sets in motion an appropriate medium, which in turn acts upon the sense-organ.

a 26. ποιεῖ τὴν αἴσθησιν. Cf. 417 a 4, 419 a 3, 30, 422 a 17. Unless it does this, the sensible object is only δυνάμει αἰσθητόν, as indeed αἰσθητὰ always are, except in actual sensation. A. has clearly laid this down, 431 b 24—26, and we are reminded of the statements in *Metaph.* that most so-called substances are potentialities (1040 b 5 sq.), that particular sensible substances cannot be defined or brought under demonstration owing to the contingent element of matter in them (1039 b 27 sqq.), and that their very existence becomes problem-

atic so soon as they pass out of sensation (1040 a 2 sqq., 1036 a 5—9). Thus as αἰσθητικὸν to αἴσθησις, so the potential αἰσθητὸν to the actual ποίησις τῆς αἰσθήσεως. Cf. Beare, *Greek Theories*, p. 63.

a 30. περὶ δὲ ἀφῆς καὶ γεύσεως. In the case of touch and of taste it might appear as if there were immediate contact. But, as we shall see (in cc. 10 and 11), this is not so; there is a medium in the case of these senses also, namely flesh.

a 31. οὐ φαίνεται δέ is concessive, "although it does not appear so." ὕστερον ἔσται δῆλον, see 422 b 34 sqq.

a 32. κοινὸν γὰρ δὴ τι πάθος, "a common property." Above (418 b 8) he had called the transparent φύσις: cf. *De Sensu* 3, 439 a 21 οὐκ ἔστιν ἴδιον ἀέρος ἢ ὕδατος οὐδ' ἄλλου τῶν οὕτω λεγομένων σωμάτων, ἀλλὰ τις ἔστι κοινὴ φύσις καὶ δύναμις, ἣ χωριστὴ μὲν οὐκ ἔστιν, ἐν τούτοις δ' ἔστι, καὶ τοῖς ἄλλοις σώμασιν ἐνυπάρχει.

419 b 3. ὕστερον, 421 b 13—422 a 6. The commentators call this medium of smell τὸ δίοσμον. As Them. (62, 31 sq. H., 115, 2 sq. Sp.) informs us, A. himself does not use this term any more than τὸ δηχῆς for the medium of hearing. They are said to have been first applied by Theophrastus.

## CHAPTER VIII.

A. gives the second place to the sense of hearing. His treatment, though by no means exhaustive, is far more complete than in the preceding chapter; consequently in *De Sensu* c. 4, 440 b 27 sq. he virtually admits that he has nothing to add with regard to sound, the object of hearing, and so passes at once from the consideration of colours to that of odours and flavours, although the sense of hearing receives some attention in *De Sensu*, cc. 6 and 7. Our present chapter defines the sensible object, deals with the medium and incidentally with the organ, so far as this can be done without detailed physiological examination. After a short notice of the fundamental qualities of sound, the high or shrill, ὀξύ, and the low or deep, βαρύ, A. proceeds to discuss vocal sound and the mode of its production in living beings. Throughout, the discussion implies what is more distinctly stated, *De Sensu* 6, 446 b 30, that sound is φερομένου τινὸς κίνησις: but A. does not here explain how the conceptions of φορά and ἀλλοίωσις should be combined.

419 b 4—420 a 2. Sound, that is, actual sound, is due to the concussion of two or more solid bodies and the communication of the shock to the air. Not all bodies, however, produce sound, but only such as are hard and smooth, or hollow bodies which reverberate when struck. The medium of sound is air or water, but the medium is not the determining cause of sound [§§ 1, 2]: there must be a concussion of hard bodies with each other and with the air, the blows following one another so rapidly and violently that the air shall not have time to disperse gradually [§ 3]. If the air be bounded and enclosed, being unable to find an escape, it reverberates and produces an echo. As a fact, in every case of sound there is some echo, but often this is indistinct; just as light is everywhere reflected or refracted, though as a rule not enough to throw a shadow [§ 4]. If by a vacuum we mean the air, it is correct to say that a vacuum is a determining condition of hearing. Air must, in order to communicate sound, be in one continuous mass. Soft bodies, like sponges, wool, etc., emit no sound, nor do hard bodies if they come in contact gradually

(for then the air succeeds in getting away). Hence the conditions required: sonant bodies must be hard, not soft, with interspaces through which the air may escape, and smooth, not rough, with hollows that may serve as retreats for the air [§ 5].

**419 b 5. ψόφος.** Cf. *De Caelo* II. 9, 291 a 9 ὅσα μὲν γὰρ αὐτὰ φέρεται, ποιεῖ ψόφον καὶ πληγὴν· ὅσα δ' ἐν φερομένῳ ἐνδέδεται ἢ ἐνυπάρχει, καθάπερ ἐν τῷ πλοίῳ τὰ μόρια, οὐχ οἷόν τε ψοφεῖν, οὐδ' αὖ τὸ πλοῖον, εἰ φέροιτο ἐν ποταμῷ. καίτοι τοὺς αὐτοὺς λόγους ἂν ἐξείη λέγειν, ὥς ἄτοπον εἰ μὴ φερόμενος ὁ ἰστός καὶ ἡ πρύμνα ποιεῖ ψόφον πλὴν τηλικαύτης νεώς, ἢ πάλιν αὐτὸ τὸ πλοῖον κινούμενον. τὸ δ' ἐν μὴ φερομένῳ φερόμενον ποιεῖ ψόφον· ἐν φερομένῳ δὲ συνεχὲς καὶ μὴ ποιοῦντι πληγὴν ἀδύνατον ψοφεῖν. ὥστ' ἐνταῦθα λεκτέον ὥς εἴπερ ἐφέρετο τὰ σώματα τούτων εἴτ' ἐν ἀέρος πλήθει κεχυμένῳ κατὰ τὸ πᾶν εἴτε πυρός, ὥσπερ πάντες φασίν, ἀναγκαῖον ποιεῖν ὑπερφυᾶ τῷ μεγέθει ψόφον, τούτου δὲ γινομένου καὶ δεῦρ' ἀφικνεῖσθαι καὶ διακναίειν. ὥστ' ἐπείπερ οὐ φαίνεται τοῦτο συμβαίνειν, οὐτ' ἂν ἔμψυχον οὔτε βίαιον φέροιτο φορὰν οὐδὲν αὐτῶν, where A. is discussing the Pythagorean theory of the harmony (συμφωνία) of the spheres. ὁ μὲν γὰρ ἐνεργεία τις, ὁ δὲ δυνάμει. To transform this into a grammatical sentence, we must supply ὧν ψόφος ἐστὶ after τις and δυνάμει, but the fact is that the two datives ἐνεργείᾳ and δυνάμει after being used repeatedly as adverbs with the participle ὧν, have come to be virtually indeclinable adjectives.

**b 6. ἔχειν ψόφον,** a frequent variation of παρέχειν ψόφον, which is itself equivalent to ψοφεῖν or ψοφητικὰ εἶναι. Cf. b 7 *infra* ὅτι δύναται ψοφῆσαι and 425 b 29 τὸ ἔχον ψόφον οὐκ ἀεὶ ψοφεῖ. So ἔχειν ὁσμὴν 421 b 7 sq., χυμὸν 422 a 30, 424 a 22 sq. The sound or odour or flavour, if regarded simply as the power to stimulate sense, resides in the external thing.

**b 7. δύναται.** Beyond this remark there is no further allusion to sound potential. We confine ourselves to sound actual. The distinction is brought up again 425 b 26—426 a 8.

**b 8. τοῦτο δ' ἐστίν,** "that is to say"; the words αὐτοῦ μεταξὺ...9 ἐνεργείᾳ being substituted for ψοφῆσαι. Cf. Them. 63, 7 H., 115, 21 Sp. ψοφεῖ δέ, ὅταν δύνῃται ἑαυτοῦ μεταξὺ καὶ τῆς ἀκοῆς ἐμποῖῃσαι τὸν κατ' ἐνέργειαν ψόφον. αὐτοῦ, the sonorous object itself. Them. paraphrases it by ἑαυτοῦ. Cf. *note* on 417 b 6, εἰς αὐτό. τῆς ἀκοῆς, "the organ of hearing"; just as ὄψις was used for the eye, 419 a 13. So far A. appears to deal with sound and hearing from the side of the object, i.e. of sound.

**b 9. γίνεταί δ'.** The object of hearing, sound, as compared with the object of sight, colour, is complex. It involves three material conditions: a thing that strikes, a thing that is struck, and a medium. What is heard is the sound of something (τινός) striking against something else (πρός τι) in a certain medium (ἐν τινι).

**b 10. ἡ ποιοῦσα:** by attraction for τὸ ποιοῦν, cf. 404 a 25 sq.

**b 13. ὥσπερ δ' εἶπομεν,** *supra* 419 b 6.

**b 14. τῶν τυχόντων.** Cf. 407 b 19, *note*.

**b 16. τὰ δὲ κοῖλα.** The construction is so far broken that instead of a subordinate causal clause, τὰ δὲ κοῖλα <ὅτι> κτέ., we have a fresh main sentence (τῇ ἀνακλάσει πολλὰς ποιεῖ πληγὰς), which really contains the reason why hollow bodies give sound, namely that there is a reverberation and multiplication of blows. Cf. 428 a 26 sq.

**b 18. τοῦ κινηθέντος,** int. ἀέρος. ἔτι. A. here passes on to consider the medium of sound. ἄλλ' ἤττον. These words, if retained, are parenthetical: int. ἐν ὕδατι ἢ [than] ἐν ἀέρι.

**b 19. κύριος,** "the determining condition." As three have been named,

that which strikes, that which is struck and the air 'or water' in which it is struck, it is natural to ask which is the main condition, as daylight is for the visibility of coloured objects. The determining condition is pulsation of air intercepted in a confined space.

b 20. πρὸς τὸν ἀέρα. Is this a second condition? When we come to read δὴ ἐὰν ταχέως κτέ. (b 22), it is plain that A. is thinking of an exceptional case where air itself is one of the bodies struck, as e.g. in the cracking of a whip. That the air in such cases is both the medium and the body struck is clearly recognised by Alex. Aphr. *De An.* 47. 18 ἥδη δὲ καὶ μόνος ὁ ἀήρ πληγείς πως ψόφον ποιεῖ, Them. 63, 30 H., 116, 25 Sp. *τηνικαῦτα δὲ τοὺς δύο ἀναδέχεται λόγους ὁ ἀήρ τὸν τε τοῦ τυπτομένου σώματος καὶ τὸν τοῦ ἐν ᾧ τύπεται.* Not much would be gained by the proposal to insert ἢ or to put a full stop after ἀλλήλα and begin the next sentence with καὶ πρὸς τὸν ἀέρα τοῦτο δὲ γίνεται.

b 21. μὴ διαχυθῇ. The blows need to be smart and quick, or the air will disperse, and the sound in that case will be slight, or even too slight to be appreciable.

b 23. φθάσαι, "get a start of," "anticipate," "head off."

b 24 ὥσπερ ἂν εἰ σωρόν...25 ταχύ. The rapidity and vigour of the stroke required if the dispersion of the air is to be effectually anticipated must be the point of the comparison. Philop. supposed the sand to be shot out of a funnel. The sand of itself would fall noiselessly upon the heap below, although it has a certain amount of solidity; and it is only by striking rapidly that any sound can be produced. (Air is thought to be κενόν, yet it has solidity in it. You take the exceptional case when you appear to have one body only: the second is air struck so rapidly that it has no time to escape.) But if this were the sense, it would surely be better to take ταχὺ with τύπτει and not, as the order of the words would suggest, with φερόμενον. As Professor Beare points out (*Hermathena* XIII., p. 73 sq.) this explanation, like all hitherto offered, is quite inadequate. He himself gives the following most satisfactory explanation: "The ὄρμαθός φερόμενος is a 'revolving ring,' a sand-whirl, such as often appears in warm, sandy countries when a wind plays upon the sand in a certain way. A vortical motion occurs in the mass of sand, which arranges itself in a revolving ring, and, besides revolving on its centre, also moves onwards with a certain speed" (φερόμενον ταχύ). "These rings, which are of all sizes, are frequent in South Africa, and are vulgarly known as 'devils,' owing to their unwelcome effects when they happen to collide with and break over a traveller. The word ὄρμαθός is very well suited to designate a revolving ring of this kind. Hesychius gives χορός as the first meaning of ὄρμαθός; and indeed the revolving movement of a circle of dancers linked hand-in-hand well illustrates the rapid whirling of the eddy of sand or dust. Thus A. improves upon his first example σωρόν, which might or might not be in motion and which therefore here may or may not agree with φερόμενον, by adding ἢ ὄρμαθόν, which must of course move in order to exist. The object of the whole illustration is to enable one to 'envisage' more clearly what the writer supposes to take place in the sound-medium, the air, when the πληγή which causes sound is inflicted upon it....The rapid vortical motion constitutes the *raison d'être*, or rather the physical cause, of the ὄρμαθός, and is not an effect of the πληγή."

b 25. ἐνὸς γενομένου. The same idea as that suggested by συνεχῆς. The air is one continuum and not composed of adjacent particles with interspaces. The enclosed cavity is not empty: it has air already in it. For this reason that part of the air which has been pushed against the solid walls of the cavity must on finding no escape in that direction resist the impact of that part of the air

which has been set in motion from without. This latter part is not that which in the first instance received the concussion, but that to which the impact has been transmitted as it travelled along the continuum of air to the entrance of the cavity and even inside it.

b 27. *πάλιν...ἀπωσθῆ*. The idea of air being repelled and driven back from air, which has caused difficulty, is made intelligible if we adopt the explanation offered by Alex. Aphr., *De An.* 47, 25 ὅταν γὰρ ὁ πληγεὶς ἀήρ εἰς μείνας ἐνεχθεὶς ἐπὶ τι στερεὸν ἔχον τινὰ κοιλότητα ὑπὸ τοῦ ἀέρος τοῦ ὄντος ἐν τῷ κοίλῳ τούτῳ ἡνωμένου διὰ τὸ περιέχεσθαι καὶ μὴ θρυπτομένον ἀλλ' ἐνὸς μένοντος ἀπωσθῆ, διὰ τὴν βίαν ἐπὶ ταῦτον φέρεται ὅθεν ἡνέχθη. οὐ γὰρ κενὴ τῷ ἀγγεῖῳ προσπίπτει, ἀλλὰ ἀέρος πλήρει, ὅφ' οὐ διὰ τὸ συνεχέσθαι αὐτὸν ὑπὸ τοῦ ἀγγείου κωλυθεὶς εἰς τὸ πρόσω ἐνεχθῆναι ἢ θρυβῆναι, ἀπωσθεὶς εἰς τοῦπίσω πάλιν φέρεται ταχέως ἅτε εὐκίνητος ὢν τὸν αὐτὸν ἔτι φυλάσσων ψόφον.

b 27. *ὥσπερ σφαῖρα*, i.e. like a ball rebounding from a wall. So the air can find no exit because the other air already massed in the closed cavity acts like a wall. Cf. Alex. Aphr., *De An.* 48, 7 δύναται δὲ λέγεσθαι καὶ ὅτι οὐχ ὁ πρῶτος ἀήρ πληγεὶς φέρεται ἐπὶ τὸ κοῖλον σῶμα καὶ τὸν ἐν τούτῳ ἀπειλημένον ἀέρα καὶ πάλιν ἀπὸ τούτων εἰς ταῦτον ἀνακάμπτει (οὕτως γὰρ ἀντιπερίστασις ἂν γίνοιτο διπλῇ τοῦ μετὰ τὸν πεπληγῶτα ἀέρα καὶ φερόμενον αὐτῷ ἐπὶ τὸν κοῖλον τόπον ὑποχωροῦντος καὶ πάλιν ἀναστρέφοντος), ἀλλ' ὁ μὲν πρῶτος ἀήρ πληγεὶς διὰ τὸ τάχος τῆς πληγῆς συνεχῆς καὶ ἀδιαίρετος μείνας τὸν μετ' αὐτὸν σχηματίζει ἂν τῇ ὁμοίᾳ πληγῇ, καὶ οὗτος τὸν μετ' αὐτόν, καὶ οὕτως κατὰ συνέχειαν μέχρι τοῦ ἀγγείου ἢ πρόδοδος τοῦ ψόφου κατὰ διάδοσιν γίνουτ' ἂν, ὁ δὲ τελευταῖος ὁ πρὸς τῷ ἀγγεῖῳ πληγεὶς τε καὶ σχηματισθεὶς κωλυθεὶς εἰς τὸ πρόσω διαδοῦναι τὴν πληγὴν ὑπὸ τοῦ ἀγγείου, ἀνάπαλιν ὑπὸ τῆς τοῦ στερεοῦ ἀντιτυπίας ἀπωσθεὶς, ὡς σφαῖρα ἀπὸ στερεοῦ τιως, τὸν ἐπὶ τὰδε αὐτοῦ πλήσσοι τε ἂν καὶ σχηματίζει πάλιν.

b 29. *ἀνακλάται*, is "refracted" or "reflected" (to use modern scientific terminology), according as the ray of light passes through, or is unable to penetrate, the obstacle.

b 33. *ἥ...ὀρίζομεν*. The expression is inexact, as pointed out by Torstrik, who gives us the choice between *ἥ τὸ φῶς ὀρίζεται*, "by which light is bounded," if A. is speaking of the fact, and *ἧ τὸ φῶς ὀρίζομεν*, "by which" [viz. *τῷ σκιὰν ποιεῖν*] "we commonly define light." Them. (64, 4 H., 117, 13 Sp.), more exact than his author, writes: *ἡ ἀνάκλασις ἐκδηλοτέρα διὰ τὸ καὶ σκιὰν δύνασθαι ποιεῖν τὸ ἀποπαλλόμενον φῶς*. If *ὀρίζομεν* means "we define," cf. 405 b 11, 413 b 12, 427 a 17, 432 a 15, 435 b 16.

419 b 33—420 a 2. Does this section, we ask, refer distinctly to echo? Probably not, though Them. (64, 6 sqq. H., 117, 16 sqq. Sp.) tries to make the most of the connexion between smoothness and hollowness as the two conditions necessary for an audible echo.

b 33. *τὸ δὲ κενὸν ὀρθῶς*. The view that vacuum is a determining cause of hearing is, A. pronounces, correct, if correctly interpreted: that is, in so far as we accept the popular description of air as vacuum. Cf. *De Part. An.* II. 10, 656 b 14 *ἔχει δὲ καὶ τὴν ἀκοὴν εὐλόγως ἔνια τῶν ζῴων ἐν τῷ τόπῳ περὶ τὴν κεφαλὴν· τὸ γὰρ κενὸν καλούμενον ἀέρος πλήρὲς ἐστὶ, τὸ δὲ τῆς ἀκοῆς αἰσθητήριον ἀέρος εἶναι φάμεν*. Air, as we saw, is the cause of hearing, provided it be made to pulsate in one continuous mass. *κύριον τοῦ ἀκούειν*. Here air is the determining cause in hearing, *τοῦ ἀκούειν*. Above, 419 b 19, the question is whether it is *ψόφου κύριος*. A. recognises the fact that *ψόφος* and *ἀκοή* are the same in actual operation, but he distinguishes the one from the other. He insists on the importance of impact on the objective side and the presence of air in the ear on the subjective side.



**b 34.** δοκεῖ γὰρ εἶναι κενόν. The word κενόν in A., as in the ordinary usage of Greek literature, denotes that which is empty of solid bodies, unoccupied by anything excepting air, and not, as with Democritus, absolute void or "vacuum." Cf. the Vergilian phrase "auras...inanes" (= auras...tenuis of G. IV. 499 sq.).

**b 35.** ψαθυρός. This word, which properly means "friable," "easily crumbling," of solids, is used in *De Sensu* 4, 441 a 25 of water as contrasted with the more viscid oil.

**420 a 1.** γεγωνεῖ. A mainly poetic word, used however by Xenophon and in the Socratic dialogue *Hippias Major* 292 D.

**a 1.** λείον. The similarity of the language in 435 a 5—8 and the final limiting clause there "provided the air be one, as it is in the case of a smooth body" render it probable that there A. has echoes as well as reflection of light in his mind. The use of λείον in this passage proves, if any proof were needed, that A. does not limit ἐπίπεδον to a flat surface or plane. The word used by the Pythagoreans to denote surface was χοροά (cf. note on 418 a 26, ὁρατόν δ'), in Plato it is ἐπίπεδον only and in A. ἐπίπεδον is still in use, although he also employs the new word ἐπιφάνεια, which is never found in Plato in this sense. After Euclid's time ἐπίπεδον was limited to plane which in Archimedes is also expressed by ἡ ἐπίπεδος (int. ἐπιφάνεια). Heiberg, *Mathematisches zu Aristoteles*, p. 8, remarks: "Proclus in *Euclidem*, pp. 116, 17, observes that Plato and A. do not distinguish ἐπίπεδον and ἐπιφάνεια. Plato has only ἐπίπεδον, sometimes for surface (*Laus* 817 E, *Meno* 76 A, *Philebus* 51 C), sometimes for plane (*Theaetet.* 173 E, *Rep.* 528 A—D). A. is already acquainted with ἐπιφάνεια in the mathematical sense (*Phys.* IV. 1, 209 a 8, *Metaph.* 1020 a 14, 1060 b 15), but still uses ἐπίπεδον also for surface (*Top.* VI. 4, 141 b 7, 22, *De Caelo* I. 1, 268 a 8, *Metaph.* 1016 b 27) and both interchangeably, e.g. *Categ.* 6, 5 a 2 sqq. Once in Euclid ἐπίπεδον survives as surface, in a definition presumably derived from an earlier text book, though elsewhere Euclid sharply distinguishes the two terms, e.g. Def. 5 ἐπιφάνεια δὲ ἐστίν, ὃ μῆκος καὶ πλάτος μόνον ἔχει, Def. 7 ἐπίπεδος ἐπιφάνεια ἐστίν, ἥτις ἐξ ἴσου ταῖς ἐφ' ἑαυτῆς εὐθείαις κείται. The latter definition, there is reason to think, originated with Euclid himself. These facts make against an assertion in Diog. Laert. III. 24 [Πλάτων] πρῶτος ἐν φιλοσοφίᾳ... ὠνόμασε... τῶν περάτων τὴν ἐπίπεδον ἐπιφάνειαν." I am indebted to Dr T. L. Heath for my acquaintance with Heiberg's article.

**a 2.** ἄμα. The air is simultaneously unified at the very moment of impact, and this because of the nature of the surface, διὰ τὸ ἐπίπεδον.

**420 a 3—b 4.** That may be defined as sonorous which is capable of setting in motion air which reaches continuously to the organ of hearing. The movement in the external air is communicated to the air within the ear. The organ of hearing must be in that part of the body where air is confined; this air being motionless, the ear perceives accurately all the varieties of sound. We can hear in water, but if water reaches the inner ear hearing is hindered, as also when the membrane is injured. The air, i.e. the air in the ear, has, it is true, a motion of its own, indicated by the ringing in the ears. It is not by that, however, that we hear, but by the extraneous motion transmitted from the object [§ 6]. Both that which strikes and that which is struck contribute, though in different ways, to sound. But to ensure repercussion, the thing struck must be smooth and even [§ 7]. Sounds differ in pitch, and this difference is expressed by the terms acute and grave borrowed from tangible objects. The acute, whether to touch or to the ear, is not the same as the fast, nor the blunt or grave the same as the slow, but the acute, because of the fast

motion which it sets up, is itself incidentally fast, and similarly the blunt or grave is incidentally slow [§ 8].

420 a 3. *συνεχῆς* qualifies *ένός*. Cf. *Phys.* I. 3, 186 a 28, *Μεταφ.* 1015 b 36 sq., 1016 b 7 sqq., and especially 1016 a 4 *αὐτῶν δὲ τούτων μᾶλλον ἐν τὰ φύσει συνεχῇ ἢ τέχνῃ*. *συνεχῆς* δὲ λέγεται, οὐ κίνησις μία καθ' αὐτὸ καὶ μὴ οἶόν τε ἄλλως, where unity of motion is made the test of continuity. Cf. *note* on 411 b 6.

a 4. *συμφυῆς*, "naturally continuous with." The contrast is between parts which are one because they have grown together, and parts connected simply by contact. A natural limb is *συμφυῆς* with the rest of the body, an artificial limb, though *συνεχῆς*, is not *συμφυῆς*. Cf. *Μεταφ.* 1014 b 22 *διαφέρει δὲ σύμφυσις ἀφῆς· ἐνθα μὲν γὰρ οὐδὲν παρὰ τὴν ἀφὴν ἕτερον ἀνάγκη εἶναι, ἐν δὲ τοῖς συμπεφυκόσιν ἐστὶ τι ἐν τὸ αὐτὸ ἐν ἀμφοῖν, ὃ ποιεῖ ἀντὶ τοῦ ἄπτεσθαι συμπεφυκέναι καὶ εἶναι ἐν κατὰ τὸ συνεχῆς καὶ ποσόν, ἀλλὰ μὴ κατὰ τὸ ποιόν*, and *De Sensu* 2, 438 a 29 *τό τε γὰρ συμφύεσθαι τί ἐστι φωτὶ πρὸς φῶς; ἢ πῶς οἶόν θ' ὑπάρχειν; οὐ γὰρ τῷ τυχόντι συμφύεται τὸ τυχόν*.

a 4. *ἀήρ*. I prefer this reading, which is more consistent with the language of A. elsewhere. Though it has slight support from the manuscripts, hardly any indeed, it is attested by the commentators. A. is speaking of the air enclosed (a 9 *ἐγκατακοδόμηται*) in the ear under the membrane of the tympanum. This air has grown together with, and become one with, the organ of hearing: as Torst. observes, "*concrevit cum auditu*." On the other hand, if we take the alternative reading *ἀέρι*, "the ear is *συμφυῆς* with the air," which air is meant, the air within the ear or the air outside? If the former, there is force in Torst.'s remark "*ridiculum est dicere auditum concrevisse cum aere*." If the latter (and Professor Beare, who adopts this reading, translates: "the organ of hearing proper is physically homogeneous with the air," l.c., p. 114), there seems no appropriateness in *συμφυῆς*, for the inner air and the outer air, though "physically homogeneous," have certainly not become so by natural growth; for *συμφυῆς* only applies in its proper sense to things which are qualitatively distinct and unlike, though they form a natural whole. Besides Philop. (364, 11, 365, 20), *Simpl.* (143, 22), *Soph.* (86, 25), we have the more valuable authority of Theophrastus as reported by Prisc. Lyd. (16, 22 *ἀλλ' εἰ δὲ ἀήρ συμφυῆς, τὸ δὲ ἀκοῦεν κτέ.*), whose evidence is accepted by Professor Bywater *ad loc.* As to Them., it is true that he first paraphrases (64, 16 H., 117, 29 Sp.) *ἀκοὴ δὲ συμφυῆς ἀέρι*, but that this is the licence of paraphrase in wilful alteration is rendered exceedingly probable by the words immediately following: *ἐγκατακοδόμηται... ἀήρ...τῇ μήνιγγι συμφυῆς* and (64, 28 H., 118, 17 Sp.) *γίνεται γὰρ ὥσπερ μεθόριον ὁ τῇ μήνιγγι συμφυῆς ἀήρ τοῦ τε εἴσω πνεύματος τοῦ αἰσθητικοῦ καὶ τοῦ ἔξωθεν ἀέρος*. Cf. 65, 16 sq. H., 119, 26 Sp. See also Bon. *Ind. Ar.* 720 a 11.

a 4. *διὰ δὲ τὸ ἐν ἀέρι εἶναι*. The commentators supply *τὴν ἀκοήν*, and so I have translated. But it would seem more natural to regard *τὸ κινητικόν...ἀκοῆς* as the subject, the sonorous body as such. A. in various passages expressly declares the organ of hearing to consist of air (425 a 4, *De Sensu* 2, 438 b 20, *De Part. An.* II. 10, 656 b 16 sq., *De Gen. An.* v. 2, 781 a 23 sq.) and such a view is in full accord with the whole tenor of the present discussion, 419 b 8, 419 b 33—420 a 19. But it seems to me impossible that, if the organ proper is of air (*ἀέρος εἶναι φάμεν*, 656 b 17), it should also be said to be in air. The external ear, Empedocles' *σάρκινος ὄζος*, is in air no doubt, but so is the eye and the whole body, and it is not with the external ear that we hear. Them. must have felt this difficulty, for, as cited in the last note, he sometimes substitutes *ἡ μήνιγξ*. But is the membrane of the tympanum really the organ? If, however, my suggestion be taken, all that needs to be assumed is that A. confines his

attention, as usual, to the normal case of sonorous bodies in the air, and regards hearing in the water as an exception. The conjecture of Steinhart, *διὰ τὸ εἶνα ἀέρα εἶναι*, has the great merit of avoiding the difficulty of the traditional interpretation, and it is adopted by Professor Beare, who translates thus (L.C., p. 114): "Since then the air is one, it follows that, when the outer air is moved, the inner air is moved also."

a 6. τὸ κινήσόμενον μέρος καὶ ἔμψυχον, i.e. the part that is to be affected (by sound). Since perception implies movement, *κινήσόμενον* here is equivalent to *αἰσθησόμενον*. We might have expected τὸ ἔμψυχον ζῶον as subject. But the animal does not hear in all parts of the body (a 6) and, if hearing were possible at any other part of the body than the ear, that part would be an ὄργανον. The text substitutes a description of ὄργανον for the word ὄργανον itself.

a 8. ἢ τούτου, i.e. ἢ τοῦ θρύπτεσθαι κωλυθέντος ἀέρος.

a 9. ἐγκαταφοδόμεται, "is lodged deep down," "immured."

a 10. ἀκίνητος. This word does not mean that the air within the ear is absolutely motionless; for not only is the communication of motion to it from without the cause of hearing, but Aristotle expressly says below (a 16) that it has an intrinsic motion of its own. It is necessary to his theory that the air in the ear should not be dislodged and that it should be relatively at rest, in the same sense as a lake when compared with the running water of a river. It will then be better able to receive the motions which it is its function to receive. Cf. Them. 65, 13 sqq. H., 119, 22 sqq. Sp. Similarly mind is ἀπαθής (429 a 15) in order that it may more perfectly "suffer," πάσχειν, i.e. receive πάθη from without.

a 11. τῆς κινήσεως, "of the movement," int. τῆς ψοφητικῆς, "the movement which conditions sound." διὰ ταῦτα, i.e. the position of this internal air well covered up and protected.

a 12. πρὸς αὐτὸν τὸν συμφυῆ ἀέρα, "right up to the air which is in and part of" the ear. Note that Aristotle looks upon the ear as consisting of bone, membrane, convolutions and the air contained, exactly as he recognises water as a constituent part of the eye-ball, and as anyone would count the air in a drum as an essential part of the drum.

a 13. ἑλικας, the spiral convolutions of the inner ear, often called the labyrinth. The word is applied to mathematical spirals, e.g. to those described by the heavenly bodies *Μεταφῆ*. 998 a 5.

a 14. τὸ ἐπὶ τῇ κόρῃ δέρμα, the cornea, which Simpl. describes (144, 29) as ὁ κερατοειδὴς λεγόμενος χιτών.

a 16. ὥσπερ τὸ κέρας: the musical instrument. A more familiar instance is that of spiral shells, which, like the horn, ring when held to the ear. The ear is active, the organ is in its healthy, normal condition when, if the hand be put over it, a murmur is heard like that proceeding from a shell. ἀεὶ, "perpetually." Such inner movement is always going on. As Them. says (65, 18 H., 119, 28 Sp.) διὸ καὶ ἡχεῖ τὸ οὖς ἀεὶ ὑπὸ τῆς τοιαύτης [int. τῆς οἰκείας] κινήσεως. We are only aware of it when we apply the test.

a 17. ἀλλ' ὁ ψόφος ἀλλότριος. Sound which we hear comes in from without and does not belong to the ear itself, and is not, like the ringing just mentioned, due exclusively to the ear.

a 18. τῷ κενῷ καὶ ἡχούντι. A popular description of the ear: presumably one and the same organ is intended, which is (a) empty, (b) resonant. A. goes on to show that his theory satisfies these conditions if by "resonant" we understand the air enclosed (ὀρισμένον) within the ear, and by "empty" an organ which contains within it nothing but air. It should be remembered, as

mentioned above (*μοτε* on 420 a 12), that the organ of hearing is to him the ear with the interior air in it, *ὁ συμφυῆς ἀήρ*. Here *ἵχουντι* better suits the enclosed air, *κενὸν* the cavity of bone, membrane, and convolutions.

a 19. *ὀρισμένον*. Probably "delimited" or "circumscribed." Against this interpretation Simpl. (145, 29) raises the objection that the same thing will apply to the external air, and prefers to explain "air of a definite character" *τῷ ὡτικῷ ἥχῳ χαρακτηριζόμενος*. This seems over subtle, though it is no doubt true that the air confined within the ear will remain *ὀρισμένος καὶ ὁ αὐτὸς* when it ceases by its peculiar motion to produce the murmur which is the evidence of its vital activity. But this point A. could afford to neglect when adjusting the popular saying to his theory.

a 20. *ἢ καὶ ἄμφω*. This is Aristotle's own solution.

a 23. *ὅταν τις κρούσῃ*. With *κρούσῃ* should probably be understood *τὰ ἀφαλλόμενα*, the objects which rebound (such as tennis balls and the like). It is just possible to understand *τὰ λεία τῇ σφαίρᾳ*, on the analogy of *τοῖς ποσὶ τὴν γῆν κρούειν*. Them. (65, 31 H., 120, 17 Sp.) calls attention to the inadequacy of the illustration because the ball is not continuous with the surface against which it strikes and from which it rebounds: *οὐδὲ τὸ παράδειγμα ᾧ κέχρηται Ἀριστοτέλης πάντῃ ἔοικε· φησὶ γὰρ τὸν ψόφον εἶναι κίνησιν τοῦ δυναμένου κινεῖσθαι τὸν τρόπον τοῦτον, ὃν τὰ ἀφαλλόμενα ἀπὸ τῶν λείων, ὅταν τις κρούσῃ. τὰ μὲν γὰρ ἀφαλλόμενα χωρίζεται ὃν ἀβάλλεται, ὃ δὲ πρῶτως ψοφῆσας ἀήρ οὐκ αὐτὸς ἀβάλλεται ἐπὶ τὴν ἀκοήν*. I append a supplementary note by my friend Miss Alford: "I think the object is *τὰ λεία*. The noise is the movement of a portion of air which being *συνεχῆς καὶ εἰς* has the power to leap back from the surface as a ball (or a tea-cup) leaps off from a tea-tray when the fist is brought down on the tray. That which leaps off is, like the air in most cases of hearing, neither *τὸ τύπτον* nor *τὸ τυπτόμενον* but a third thing. Themistius objects that the air which produces the sound does not as one whole leap off from the surface struck and pass across and strike on the air in the ear. That portion of air which begins the production of the sound *ὁ πρῶτως ψοφῆσας* (being that which rested on the surface struck and leaps off from it like the ball) sets in motion successive portions of air comparable to waves, of which the last strikes on the air in the ear and directly produces the sound heard." *ὥσπερ εἴρηται*, cf. *συῆτα* 419 b 13 and 419 b 6 there referred to.

a 25. *ἀθροῦν*. In this term are summed up the conditions denoted above by *συνεχῆς καὶ εἰς* (419 b 35) or *εἰς συνεχεία* (420 a 3) and *ὀρισμένος* (420 a 19), in the absence of which the air, when struck, disperses, so that no sound results.

a 26. *αἱ δὲ διαφοραὶ τῶν ψοφούντων*. Cf. *διαφοραὶ τῆς κινήσεως* 420 a 10 sq. Other qualities of vocal sound are, e.g., loudness, harshness and their opposites, 422 b 29 sqq. The quality of pitch is here attributed to the object which emits the sound.

a 29. *ταῦτα*, i.e. *τὸ δέξιν καὶ τὸ βαρύ*. *κατὰ μεταφορὰν*. I have found it impossible to preserve this metaphor in the translation. We do indeed talk of acute sounds and of sharp and flat notes; but the proper way of indicating in modern English the musical quality called pitch is by a different metaphor.

The analogy is so far faulty that, whereas here the opposite of *δέξιν* is given as *βαρύ*, below where A. is speaking of touch, it is *ἀμβλύ* (cf. *Prob.* XIX. 8, 918 a 19), and, while *βαρὺ* was obviously the proper and usual term for a low or deep voice in Greek, *ἀμβλύ* alone really suits the metaphor from touch. The truth would seem to be that it is only *δέξιν* which can be said to have been applied to sounds by analogy from touch, meaning "shrill" or "piercing" or "acute."

a 30 τὸ μὲν γὰρ ὀξύ...420 b 4 εἶναι. In this obscure passage there is reason to believe that A. is thinking of a Pythagorean definition and tacitly correcting the words of Plato in *Tim.* 67 b ὅλως μὲν οὖν φωνὴν θῶμεν τὴν δι' ὧτων ὑπ' αἰέρος ἐγκεφάλου τε καὶ αἵματος μέχρι ψυχῆς πληγὴν διαδιδόμενην, τὴν δὲ ὑπ' αὐτῆς κίνησιν, ἀπὸ τῆς κεφαλῆς μὲν ἀρχομένην, τελευτῶσαν δὲ περὶ τὴν τοῦ ἥπατος ἑδραν, ἀκοήν· ὅση δ' αὐτῆς ταχεία, ὅξειαν, ὅση δὲ βραδυτέρα, βαρυτέραν· τὴν δὲ ὁμοίαν ὁμαλήν τε καὶ λείαν, τὴν δὲ ἐναντίαν τραχείαν· μεγάλην δὲ τὴν πολλήν, ὅση δὲ ἐναντία, συμκράν. Cf. 80 A, B ὅσοι φθύγγοι ταχείς τε καὶ βραδεῖς ὀξεῖς τε καὶ βαρεῖς φαίνονται κτέ. According to Plato, voice, the object of hearing, is a shock transmitted to brain and blood by the air through the ears, and reaching the soul (cf. *note* on 408 b 15). The "motion" which this shock or blow sets up is hearing. Obviously, then, Plato's κίνησις is A.'s αἴσθησις of 420 a 30, since both terms refer to actual hearing. A. appears from his criticism to have understood the next sentence to mean "so much of sound as is rapid, let us call shrill, so much as is slower, deeper or of lower pitch." And in 80 A Plato certainly says that swift and slow sounds appear shrill and deep. In the *Topics* (I. 15, 107 a 15) A. quotes a Pythagorean definition of shrill or high-pitched sound: φωνὴ μὲν γὰρ ὀξεία ἢ ταχεία, καθάπερ φασὶν οἱ κατὰ τοὺς ἀριθμοὺς ἀρμονικοί.

A.'s own view appears to be that of Theophrastus, *De Musica*, frag. 89, viz. that there is a natural difference between one vocal sound and another, quite irrespective of the mode of production and of any mathematical relations which this mode of production involves. The characteristic of the shrill or high note, as compared with the deep or low one, A. explains by the analogy of the tangible quality of sharpness. What is sharp, as it were, stabs; the sensible impression is rapid and deep, if these metaphorical terms may be allowed; and the same thing is true of the shrill sound or high note, it also makes a deep impression on the ear in a very little time, whereas the impression of the deep voice as heard is assimilated to that of the slower thrust of a blunt instrument. The description may not be very accurate, but at all events it aims at establishing simple, ultimate, unanalysable differences between sounds as heard. The high note, says Theophr., can be heard at a greater distance than the low note. The ear apprehends it because of its distinctive quality, διὰ τὴν ιδιότητα, οὐ διὰ τὸ ἐν αὐτῷ πλῆθος. Nor does the high note surpass the low note in speed of transmission: if that were the case, a chord would be impossible, for the ear would catch the higher of the two components sooner than the lower: ἀλλ' οὐδὲ τάχει ἂν διαφέροι ὁ ὀξύς· προκατελαμβάνετο γὰρ ἂν τὴν ἀκοήν ὥστε μὴ γίγνεσθαι σύμφωνον. This difficulty (see *Tim.* 80 A, B and Theophr., *De Sensibus*, § 85, *Doxogr. Gr.* 525, 17), had already occurred to Plato, who met it by supposing that one vocal sound is in accord with another when the beginning of the slower is similar to the ending of the more rapid: συμφωνεῖν δ' ὅταν ἡ ἀρχὴ τῆς βραδείας ὁμοία ᾖ τῇ τελευτῇ τῆς ταχείας. Cf. *Simpl.* 147, 9—14, whose account is most explicit. It seems quite clear from *De Sensu* 7, 448 a 19 sqq., that, like Theophr., A. believed that two notes, one high, one low, which in a chord coalesce into an unity, are heard at one and the same moment: at any rate, he rejects the hypothesis of certain musical theorists, that the two sounds which compose the chord, though not arriving simultaneously, appear to do so, their lack of simultaneity being undetected, when the time between them is so short as to be imperceptible. This is impossible, according to A., because there is no such thing as imperceptible time. The argument of Theophr. is apparently fatal to the Pythagorean theory which A. here disclaims, 420 a 31 οὐ δὲ ταχὺ τὸ ὀξύ κτέ. But at the same time it is not easy to see how the whole passage is to be interpreted, if A. as well as Theophr. had really emancipated himself from the

view that a shrill or high note travels and is transmitted more rapidly than a deep or low one. The words *διὰ τὸ τάχος* and *διὰ βραδυτήτα* seem against this. We may say with Zeller (*Aristotle* II. p. 379, n. 3, E.T.) that Theophr. is opposing both A. and Plato: but the context of *frag.* 89 does not favour this supposition. We cannot credit Theophr. with the crucial experiment of the chord, for he found it in *De Sensu*. If, however, A., by his metaphors of stab and thrust, is describing the character of the contrasted sensations as facts of experience, and not as physiological processes, a different view may be taken of *διὰ τὸ τάχος*, *διὰ βραδυτήτα* and of *ἐν ὀλίγῳ χρόνῳ ἐπὶ πολὺ*. The "time" would be that during which the sensation lasts, not that which has elapsed between the shock to the sonorous body and our apprehension of the sound, an interval of which we are seldom conscious; while the relative speed would be an attribute of the sensation, wholly independent of the physical conditions necessary for the production of the sound and the rate at which the shock has travelled through the air. On this view the passage would furnish no evidence of A.'s opinion on the question whether the shrill sound does or does not travel faster than the deep or grave sound. *A fortiori*, there would be no need to suppose, with Simpl. (147, 7 sqq.), that the sentence α 30 τὸ μὲν γὰρ ὀξύ... α 31 ἐν πολλῷ ἐπ' ὀλίγον, so far from expressing A.'s own opinion, is actually the same view as the one which he emphatically condemns in the next sentence α 31 οὐ δὲ ταχὺ κτέ.

To turn now to the ancient commentators. Philop. (373, 14 sqq.) gives the fullest explanation. He distinguishes between sound, the incorporeal *ἐνέργεια*, which does not move in space, and the air, which does so travel and of which sound is the energy. Thus *ψόφος ὀξύς* = *ψόφος ταχέως παραγινόμενος ἐπὶ τὴν αἰσθησιν καὶ ἐπιμένων*, while *ψ. βαρὺς* = *ψ. βραδέως παραγινόμενος ἐπὶ τὴν αἰσθησιν καὶ ταχέως ἀποπαυόμενος*. He illustrates from the bow-string and the strings of the lyre. The bow-string takes a short time to discharge the arrow and for the same reason sends it a long way, the rapidity of discharge showing greater force: and so generally with strings at greater tension. The *ὑπάτη* of the lyre which gives the note of lowest pitch, like the G string of a violin, takes a long time to move the medium and keeps up the movement only a short time, ἐπ' ὀλίγον ἐφύλαξεν. Thin strings, like the high-pitched *νήτη*, having a thinner column of air to resist, move the air more quickly and each single vibration ceases sooner, but the series of vibrations lasts longer. Being tense, the string gives the air a smart blow, the air then retaliates with a sharp blow on the string and so on: the sound lasts as long as the series of vibrations. The reverse is the case with the thicker strings which sound the lower notes. They are slower to move the air and each single vibration lasts longer, but the series of vibrations ceases sooner, because they give the air a gentler blow and receive a gentler one from it. When he comes to α 32 ἀλλὰ γίνεται Philop. gives two alternative explanations: (α) "owing to the speed of the body which is moved and in which the sound is [the air], the stimulation of the sense by the sound becomes like it," i.e. speedy; (β) rapid or slow effect upon the sense happens to accompany shrillness or depth in sound exactly as in touch it accompanies rapidity or slowness of cleaving or dividing. What is sharp cleaves quickly: therefore rapidity of cleavage is a concomitant of sharpness to the touch. So in sound acuteness of pitch is one thing, rapid movement of sense is another, which attends upon the former. Philop. is evidently influenced by *De Gen. An.* v. 7, 786 b 25 sqq. and perhaps by certain of the musical Problems, e.g. *Probl.* XIX. 8, 21, 37, 49, 50. By *κινεῖ, κίνησις* he clearly understood spatial motion: cf. 374, 17 sq., 373, 21, 23. He took ἐπὶ πολὺ as well as ἐν ὀλίγῳ χρόνῳ of time. Simpl. (147, 3 sqq.) takes ἐπὶ πολὺ to combine distance and duration,

καὶ ἐπὶ πολὺ διάστημα καὶ ἐπὶ πολὺν ἐπιμένον χρόνον ἐξάκουστον. The low note is more slowly heard and for a less distance and lasts a shorter time. On the analogy of acute and blunt to touch, the acute of sound penetrates and strikes deep down, διεισδύνει καὶ οἷον κατὰ βάθος πλήττει, the deep note makes a more superficial impression οἷον ἐπιπολαιότερον καὶ κατὰ θλίψιν. He understands τοιαύτη, not as ταχεία, βραδεία, but as ὀξεῖα, βαρεῖα. For to stimulate sense in a short time deeply implies ταχυτής but not δξύτης: therefore we shall be speaking of the motions, not as shrill or deep, but as quick or slow, even when we do call them shrill or deep.

a 30. κινεῖ τὴν αἴσθησιν: indirectly, for the necessity of a medium was insisted upon 419 a 27—29. The phrase recurs 426 b 31. See 417 b 2, note on τὸ πάσχειν, and 431 a 4 sq. Cf. also *De Sensu* 6, 445 b 8.

a 31. ἐπὶ πολὺ. As we have seen, this has been variously interpreted of (1) distance traversed by vocal sound before it is heard or of (2) the duration, or (3) the extent, of the effect produced upon the ear when it is heard. In any case ἐν ὀλίγῳ χρόνῳ ἐπὶ πολὺ=ταχύως. The objection to (1) is that it seems inconsistent with the next sentence, a 31, οὐ δὴ κτέ. What one would expect from the passage in *De Gen. An.* v. 7, 786 b 25 sqq. is some recognition of the mass of air to be moved, so that "in a short time" should be qualified by some such words as "considering the relatively large mass to be moved." But I cannot find this in the text and it is quite inconsistent with Philop., who says expressly that the swiftness of the shrill note is partly due to the relatively small mass of air set in motion.

a 31. οὐ δὴ. This is not saying that what is high-pitched is (identically) quick, or what is low-pitched (identically) slow, but that when we hear a shrill or high note the movement in us or sensation is what it is (i.e. high-pitched or shrill) owing to speed, and when we hear a deep or low note the movement in us is what it is (i.e. deep or low) owing to slowness (characterising it). With this explanation, the apparently opposite statement in *De Gen. An.* (l.c. 787 a 30 sqq.) to the effect that τὸ ταχὺ is ὀξύ ἐν φωνῇ and that τὸ βραδέως φερόμενον is βαρὺ, does not conflict. Simpl. says διὰ τὸ τάχος means κατὰ τὸ τάχος, "in virtue of speed," and not κατὰ τὴν δξύτητα, "in virtue of high pitch." He thinks (147, 36—148, 1) that οὕτω δὴ in place of the οὐ δὴ of our text would better express the *reductio ad absurdum* to which the preceding sentence a 30 τὸ μὲν γὰρ ὀξύ κτέ., in his opinion the view of others and not of A. himself, would be exposed.

a 33. τοιαύτη, "such as described": in other words, ἐν ὀλίγῳ χρόνῳ ἐπὶ πολὺ τὴν αἴσθησιν κινεῖ, its description on the analogy of touch being that it rapidly produces a considerable impression (or with the other meaning of ἐπὶ πολὺ, a lasting impression). I am not sure that Philop. (374, 21—23, 28 sq.) means anything different from this, though he does seem to imply that he took τοιαύτη for ταχεία and βραδεία.

a 33. τοῦ δὲ διὰ βραδυτήτα. We complete this elliptical sentence τοῦ δὲ βαρέος γίνεται ἡ κίνησις τοιαύτη: in other words, ἐν πολλῷ ἐπ' ὀλίγον τὴν αἴσθησιν κινεῖ.

420 b 2 τὸ μὲν γὰρ...4 βραδὺ εἶναι. This remark concerns the illustration from touch, and not the quality of pitch.

b 3. ὥστε συμβαίνει. And so the one is *per accidens* quick, the other *per accidens* slow. We say that a clock is fast or slow when its works go too fast or too slow. Here συμβαίνει εἶναι=κατὰ συμβεβηκός ἐστι: cf. Simpl. 147, 34—36, 148, 6—8, Philop. 374, 29—31.

420 b 5—421 a 6. Voice, as distinct from mere sound, is peculiar to living things. Not all animals, however, have vocal sound. Bloodless

animals and fishes have none [§ 9]. For the production of voice, there must be breath, or air inhaled. To render it articulate speech (*διάλεκτος*) there is need also of the tongue (which, thus, has a second function besides its own necessary function in taste) [§ 10]. Physiologically, voice is produced in the *φάρυγξ*, now known as the larynx, by the action of the soul-moved breath against the wind-pipe or trachea. It is for lack of such a larynx that fishes are voiceless. Not every sound made by an animal is voice. Voice presupposes a mental image present to the animal, and is thus "significant" (*σημαντικός*) [§ 11]. Voice is impossible if we hold our breath [§ 12].

420 b 5. *ἡ δὲ φωνή*. The object of hearing is sound in general, but more particularly the species, vocal sound, or voice. See *Hist. An.* IV. 9, 535 a 27 *περὶ φωνῆς τῶν ζώων ὧδ' ἔχει*. *φωνή καὶ ψόφος ἑτερόν ἐστι, καὶ τρίτον τούτων διάλεκτος*. *φωνεῖ μὲν οὖν οὐδενὶ τῶν ἄλλων μορίων οὐδὲν πλὴν τῷ φάρυγγι· διὸ ὅσα μὴ ἔχει πνεύμονα, οὐδὲ φθέγγεται· διάλεκτος δὲ ἡ τῆς φωνῆς ἐστὶ τῇ γλώττῃ διάρθρωσις*. *τὰ μὲν οὖν φωνήεντα ἡ φωνή καὶ ὁ λάρυγξ ἀφήσιν, τὰ δὲ ἄφωνα ἡ γλώττα καὶ τὰ χεῖλη· ἐξ ὧν ἡ διάλεκτός ἐστιν*. When attention was concentrated upon the human soul (cf. 402 b 4), it was natural that vocal sound should be regarded as the exclusive object of hearing. Cf. Plato, *Charm.* 168 D *οἶον ἡ ἀκοή, φασὲν, οὐκ ἄλλου τινὸς ἢν ἀκοή ἢ φωνῆς... φωνὴν ἐχούσης ἑαυτῆς ἀκούσεται· οὐ γὰρ ἂν ἄλλως ἀκούσειε*. Hence the teleological conclusion (435 b 24 sq.) that speech subserves the end of communicating, and not as in Talleyrand's improved version, of concealing, our thoughts. On the difference between "voice" and "speech" cf. *Pol.* 1253 a 9—18. According to *De Gen. An.* V. 7, 786 b 21 sq., *φωνή* is ὅλη τοῦ λόγου: cf. *Metaph.* 1038 a 6 *ἡ μὲν γὰρ φωνή γένος καὶ ὅλη, αἱ δὲ διαφοραὶ τὰ εἶδη καὶ τὰ στοιχεῖα ἐκ ταύτης ποιοῦσιν*.

b 6. *τῶν... ἀψύχων*. Cf. *Metaph.* 1019 b 13 *καὶ γὰρ ἐν τοῖς ἀψύχοις ἔνεστιν ἡ τοιαύτη δύναμις, οἷον ἐν τοῖς ὀργάνοις· τὴν μὲν γὰρ δύνασθαι φασὶ φθέγγεσθαι λύραν, τὴν δ' οὐδέν, ἐὰν ἢ μὴ εὐφωστος*. Also St Paul, *ad Corinth.* I. 14, 7 *ὅμως τὰ ἄψυχα φωνὴν διδόντα, εἴτε αὐλὸς εἴτε κιθάρα, ἐὰν διαστολῇ τοῖς φθόγγοις μὴ δῶ, πῶς γνωσθήσεται τὸ αὐλούμενον ἢ τὸ κιθαριζόμενον*;

b 8. *ἀπότασις*, the "register," i.e. range of notes of which a voice is capable, the generic term of which *ἐπίτασις* and *ἄνεσις* are the correlative species, marking the ascending and descending scales. Cf. for *ἀπότασις* *Hist. An.* V. 14, 545 a 17 [*ζῶων*], *ὅσων ἐστὶν ἀπότασις τῆς φωνῆς* and for *ἐπίτασις* *Aristox., Harm. Elem.* I. 10 (Meib.) *ἡ μὲν οὖν ἐπίτασις ἐστὶ κίνησις τῆς φωνῆς συνεχῆς ἐκ βαρυτέρου τόπου εἰς ὀξύτερον*. *μέλος*, "tune," implying a succession of musical notes. This is an advance from *ἐπίτασις*, for the shriek of a railway whistle or the boom of a bittern exemplify high and low pitch, but are not properly musical sounds. As far as I am aware, Greek musical writers have left no definition of *μέλος*. It is one of those simple, unanalysable notions which, in A.'s words, *μετὰ τῆς αἰσθήσεως ἢ τῆς νοήσεως γνωρίζονται*. Cf. Bacchius, *Isagoge* (ed. Jan, p. 297, 22) *μέλος δὲ τί ἐστίν; ἄνεσις καὶ ἐπίτασις δι' ἑμμελῶν φθόγγων γινόμενῃ*. This is a definition in a circle of tune or melody in general, since *ἑμμελῶν* implies *μέλος*. A particular tune or melody is defined *ib.* 309, 13 *αὐτὸ ἐκ φθόγγων καὶ διαστημάτων καὶ χρόνων συγκείμενον*, "that which is made up of notes and intervals and times," but this again is circular, for his account of *φθόγγος* (292, 15), viz. *φωνῆς ἑμμελοῦς πᾶσις ἐπὶ μίαν τάσιν· μία γὰρ τάσις ἐν φωνῇ ληφθεῖσα ἑμμελὴ φθόγγον ἀποτελεῖ*, though a very good description, does not satisfy the requirements of a logical definition. In several passages of the *Politics* A. implies that *μελῆ*, melodies or tunes, and *ῥυθμοί*, rhythms, are the essential factors in music: 1340 a 13, 19, 1341 a 1, 14. The essential difference between *μέλος* and *φθόγγος*, song and speech, is well brought out *Metaph.*



1053 b 34—1054 a 2. If the universe consisted entirely of μέλη, it would be a number or assemblage of quarter tones, a quarter tone being the least musical interval, and so the unit of the scale. But if the universe consisted solely of φθόγγοι, it would be a number or assemblage of elementary sounds (στοιχεῖα, vowels and consonants: not, as Bonitz translates, Buchstaben) and a vowel sound would be the unit.

b 8. διὰλεκτον, "articulate utterance," "language," "speech," ἡ τῆς φωνῆς... τῇ γλώττῃ διάρθρωσις, as in 535 a 30, cited in *note* on 420 b 5 *supra*: cf. 420 b 18. That discourse of sweet sound should be attributed to instruments may be best understood if we take the case when the instruments accompany the chorus or when without the voices they play the same melody which the voices afterwards sing unaccompanied. The first case is noticed in *Prob.* XIX. 9, 918 a 22 διὰ τί ἦδιον τῆς μονωδίας ἀκούομεν, ἐάν τις πρὸς αὐτὸν ἢ λύραν ᾄδῃ; καίτοι πρόσχωρδα [sic Jan] καὶ τὸ αὐτὸ μέλος ᾄδουσιν ἀμφοτέρω[ς]. Cf. *ib.* XIX. 27, 919 b 26 διὰ τί τὸ ἀκουστὸν μόνον ἦθος ἔχει τῶν αἰσθητῶν; καὶ γὰρ ἐὰν ᾗ ἀνευ λόγου μέλος, ὅμως ἔχει ἦθος, *ib.* XIX. 15. When an instrumental melody is said to have character, ἦθος, it may well be supposed to "speak." The same mode of thought recurs in the musical criticism of the present day, in fact, it is implied by the very common direction "cantabile" and by our expression "phrasing," as applied to a single instrument. Professor Beare, *Greek Theories*, p. 118, thinks διὰλεκτος is "distinct from μέλος and used to designate the effect of a number of instruments played in harmony or in unison.... Articulation and harmony are terms as suitable for the interplay of ideas in conversation as for that of tones in concert." I see no reason for assuming that several instruments are necessary to διὰλεκτος: surely one can speak, as one person can carry on a monologue. As I understand it, the difference between μέλος and διὰλεκτος is that in the one the instrument mimics the emotions, in the other the intellectual functions, of human speech. As with the voice words may be either said or sung, so it is claimed for the instrument without the voice that it can express or suggest ideas in songs without words. Cf. *Probl.* XIX. 15, 918 b 17 μᾶλλον γὰρ τῷ μέλει ἀνάγκη μιμεῖσθαι ἢ τοῖς ῥήμασιν: in the expression of the idea the music, as we should say, is more important than the libretto. A. is approximating the instrument to the human voice by gradual stages. The lyre has its high and low notes, it can play a melody, it can, in fact, talk. *ἔοικε γὰρ*. This may be taken impersonally, = εἰκός ἐστιν. Or, if τὰ ἄψυχα be the subject, we may supply either φωνεῖν or τοῖς φωνοῦσι.

b 9. ταῦτ', i.e. pitch, melody, articulation (ἀπότασις, μέλος, διὰλεκτος).

b 10. ἄναιμα, i.e. insecta, crustacea, mollusca (cephalopoda), testacea. See Ogle on *Parts of Animals*, pp. xxvii.—xxx. There follows in our text a parenthetical remark on fishes.

b 11. τοῦτ', i.e. that they are voiceless. εὐλόγως, int. ἔχει.

b 12. οἱ λεγόμενοι φωνεῖν. Cf. *Hist. An.* IV. 9, 535 b 14 sqq. οἱ δ' ἰχθύες ἄφωνοι μὲν εἰσιν, ... ψόφους δὲ τινὰς ἀφιάσι καὶ τριγμούς οὓς λέγουσι φωνεῖν, οἷον λύρα καὶ χρομῖς... καὶ ὁ κάπρος ὁ ἐν τῷ Ἀχελφῷ, ἔτι δὲ χαλκὶς καὶ κόκκυξ... πάντα δὲ ταῦτα τὴν δοκοῦσαν φωνὴν ἀφιάσι τὰ μὲν τῇ τρίψει τῶν βραγχίων, ... τὰ δὲ τοῖς ἐντὸς τοῖς περὶ τὴν κοιλίαν· πνεῦμα γὰρ ἔχει τούτων ἕκαστον, ὃ προστρίβοντα καὶ κινοῦντα ποιεῖ τοὺς ψόφους.

b 13. ἴψου ψόφος. This does not rule out fish. Torstrick supposes οὐ πᾶς δὲ to have fallen out after ψόφος. If we are not satisfied with A.'s expression, the addition is a perfectly good correction.

b 14. οὐ τῷ τυχόντι μορίῳ, int. γινόμενος, that is, produced by a particular or appropriate, and not by any and every, organ. πᾶν ψοφεῖ... 15 ἐν τινι

"everything [i.e. everything that is sonorous,  $\pi\alpha\nu\ \tau\acute{o}\ \psi\omicron\phi\eta\tau\iota\kappa\acute{o}\nu$ ] emits sound" by reason of there being something that strikes, something that is struck, and a medium: cf. 419 b 9  $\gamma\acute{\iota}\nu\epsilon\tau\alpha\iota\ \delta'\ \acute{o}\ \kappa\alpha\tau'\ \acute{\epsilon}\nu\acute{\epsilon}\rho\gamma\epsilon\iota\alpha\nu\ \psi\acute{o}\phi\omicron\varsigma\ \acute{\alpha}\epsilon\lambda\ \tau\iota\nu\omicron\varsigma\ \pi\rho\acute{o}\varsigma\ \tau\iota\ \kappa\alpha\iota\ \acute{\epsilon}\nu\ \tau\iota\nu\iota$ .

b 15.  $\tau\omicron\upsilon\tau\omicron\ \delta'$ , i.e. the medium.

b 16.  $\eta\delta\eta$ . The word seems to emphasise  $\acute{\alpha}\nu\alpha\pi\nu\epsilon\omicron\mu\acute{\epsilon}\nu\omicron$ : "uses the air which is in any case breathed." No translator whom I have consulted has succeeded in expressing its force.

b 17.  $\acute{\epsilon}\pi\iota\ \delta\upsilon\omicron\ \acute{\epsilon}\rho\gamma\alpha$ . You want breath (1) to keep life going, the necessary function, (2) for the nobler function, the luxury, of speech. To qualify the internal heat is the explanation of the use of the lungs in *De Part. An.* III. 6, 668 b 33 sqq., *De Resp.* 10, 476 a 7—15. Cf. *De Sensu* 5, 444 a 25. Respiration subserves two ends: its  $\acute{\epsilon}\rho\gamma\omicron\nu$  is to reinforce the action of the chest, its  $\pi\acute{\alpha}\rho\epsilon\rho\gamma\omicron\nu$  is to facilitate smell. Arteries were taken for air vessels because they were without blood after death. Therefore their use was supposed to be to cool the blood.

b 18.  $\tau\grave{\eta}\ \gamma\lambda\acute{\omega}\tau\tau\eta$ . Cf. *De Resp.* 11, 476 a 18  $\kappa\alpha\theta\acute{\alpha}\pi\epsilon\rho\ \acute{\epsilon}\nu\iota\omicron\iota\varsigma\ \tau\grave{\eta}\ \gamma\lambda\acute{\omega}\tau\tau\eta\ \pi\rho\acute{o}\varsigma\ \tau\epsilon\ \tau\omicron\upsilon\varsigma\ \chi\upsilon\mu\omicron\upsilon\varsigma\ \kappa\alpha\iota\ \pi\rho\acute{o}\varsigma\ \tau\eta\nu\ \acute{\epsilon}\rho\mu\eta\eta\epsilon\iota\alpha\nu$ .

b 19  $\acute{\alpha}\nu\alpha\gamma\kappa\alpha\iota\omicron\nu\ \dots\ 20\ \acute{\epsilon}\nu\epsilon\kappa\alpha\ \tau\omicron\upsilon\ \acute{\epsilon}\upsilon$ . This contrast of what is "necessary" to existence and what is conducive to its perfection or full development, i.e. the distinction between necessary and nobler functions, is characteristic of Aristotle. Cf. 434 b 21 sqq., 435 b 20 sq., *Pol.* 1252 b 28  $\kappa\omicron\iota\nu\omega\nu\acute{\iota}\alpha\ \dots\ \gamma\iota\nu\omicron\mu\acute{\epsilon}\nu\eta\ \mu\acute{\epsilon}\nu\ \omicron\upsilon\delta\nu\ \tau\omicron\upsilon\ \zeta\eta\nu\ \acute{\epsilon}\nu\epsilon\kappa\epsilon\nu$ ,  $\omicron\upsilon\sigma\alpha\ \delta\acute{\epsilon}\ \tau\omicron\upsilon\ \acute{\epsilon}\upsilon\ \zeta\eta\nu$ , 1280 a 31  $\acute{\epsilon}\iota\ \delta\acute{\epsilon}\ \mu\acute{\eta}\tau\epsilon\ \tau\omicron\upsilon\ \zeta\eta\nu\ \mu\acute{o}\nu\omicron\nu\ \acute{\epsilon}\nu\epsilon\kappa\epsilon\nu$  [int.  $\acute{\epsilon}\kappa\omicron\iota\nu\acute{\omega}\nu\eta\sigma\alpha\nu\ \kappa\alpha\iota\ \sigma\upsilon\nu\eta\lambda\theta\omicron\nu$ ]  $\acute{\alpha}\lambda\lambda\alpha\ \mu\acute{\alpha}\lambda\lambda\omicron\nu\ \tau\omicron\upsilon\ \acute{\epsilon}\upsilon\ \zeta\eta\nu$ , 1280 b 29—35, *ib.* 1338 a 13 sqq., *De Part. An.* III. 7, 670 b 23  $\omicron\iota\ \delta\acute{\epsilon}\ \nu\epsilon\phi\rho\acute{o}\iota\ \tau\omicron\iota\varsigma\ \acute{\epsilon}\chi\omicron\upsilon\sigma\iota\nu\ \omicron\upsilon\kappa\ \acute{\epsilon}\xi\ \acute{\alpha}\nu\acute{\alpha}\gamma\kappa\eta\varsigma$ ,  $\acute{\alpha}\lambda\lambda\alpha\ \tau\omicron\upsilon\ \acute{\epsilon}\upsilon\ \kappa\alpha\iota\ \kappa\alpha\lambda\acute{\omega}\varsigma\ \acute{\epsilon}\nu\epsilon\kappa\epsilon\nu\ \acute{\upsilon}\pi\acute{\alpha}\rho\chi\omicron\upsilon\sigma\iota\nu$ , *ib.* III. 10, 672 b 23.

b 19.  $\eta\ \delta'$   $\acute{\epsilon}\rho\mu\eta\eta\epsilon\iota\alpha$ . To express and interpret thought is the special function of language ( $\delta\iota\acute{\alpha}\lambda\epsilon\kappa\tau\omicron\varsigma$ ). Cf. *Pol.* 1253 a 14  $\acute{o}\ \delta\acute{\epsilon}\ \lambda\acute{o}\gamma\omicron\varsigma$  [rational speech, as distinguished from  $\phi\omega\nu\acute{\eta}$ , which irrational animals share]  $\acute{\epsilon}\pi\iota\ \tau\acute{\omega}\ \delta\eta\lambda\omicron\upsilon\nu\ \acute{\epsilon}\sigma\tau\iota\ \tau\acute{o}\ \sigma\upsilon\mu\phi\acute{\epsilon}\rho\omicron\nu\ \kappa\alpha\iota\ \tau\acute{o}\ \beta\lambda\alpha\beta\epsilon\rho\acute{o}\nu\ \kappa\tau\acute{\epsilon}$ . Cf. again 435 b 24 sq.  $\gamma\lambda\acute{\omega}\tau\tau\alpha\nu\ \delta\acute{\epsilon}\ \delta\pi\omega\varsigma\ \sigma\eta\mu\alpha\acute{\iota}\eta\ \tau\iota\ \acute{\epsilon}\tau\acute{\epsilon}\rho\phi$ . Cf. also *De Resp.* 11, 476 a 18 sq. as cited in note on 420 b 18.

b 20.  $\acute{\epsilon}\nu\epsilon\kappa\alpha\ \tau\omicron\upsilon\ \acute{\epsilon}\upsilon$ . *Ind. Ar.* 291 b 25 frequentissime legitur  $\tau\acute{o}\ \acute{\epsilon}\upsilon$ , vel ita, ut e contextu orationis infinitivus verbi alicuius cogitatione addatur, veluti  $\kappa\iota\theta\alpha\rho\iota\sigma\tau\omicron\upsilon\ \tau\acute{o}\ \kappa\iota\theta\alpha\rho\acute{\iota}\zeta\epsilon\iota\nu$ ,  $\sigma\pi\omicron\upsilon\delta\alpha\acute{\iota}\omicron\nu\ \delta\acute{\epsilon}\ \tau\acute{o}\ \acute{\epsilon}\upsilon$  [sc.  $\kappa\iota\theta\alpha\rho\acute{\iota}\zeta\epsilon\iota\nu$ ], *Eth. Nic.* 1098 a 12, ...vel ita, ut  $\tau\acute{o}\ \acute{\epsilon}\upsilon$  in substantivi naturam abire videatur, syn  $\tau\acute{o}\ \acute{\alpha}\gamma\alpha\theta\acute{o}\nu$ ,  $\tau\acute{o}\ \kappa\alpha\lambda\acute{o}\nu$  (neque utriusque usus fines ubique accurate circumscribi possint). Here, as in 420 b 22 *infra* and probably 435 b 21,  $\tau\acute{o}\ \acute{\epsilon}\upsilon$  is a substantive.

b 21.  $\acute{\epsilon}\nu\ \acute{\epsilon}\tau\acute{\epsilon}\rho\omicron\iota\varsigma$ , i.e. in *De Resp.*, c. 8, especially 474 b 10 sqq.

b 23.  $\acute{o}\ \phi\acute{\alpha}\rho\upsilon\nu\acute{\gamma}\xi$ . The cavity at the back of the mouth opens both into the oesophagus or gullet and into the windpipe. A. uses the term  $\phi\acute{\alpha}\rho\upsilon\nu\acute{\gamma}\xi$  (=throat) chiefly for the upper part of the windpipe itself, what we call the "larynx": cf. *Hist. An.* IV. 9, 535 a 28 sq. In *ib.* x. 5, 637 a 29 he mentions a passage from the nostrils to the  $\phi\acute{\alpha}\rho\upsilon\nu\acute{\gamma}\xi$ . In *De Part. An.* III. 3, 664 a 16, the  $\phi\acute{\alpha}\rho\upsilon\nu\acute{\gamma}\xi$  is distinguished from the  $\omicron\iota\sigma\phi\acute{\alpha}\gamma\omicron\varsigma$ . See also III. 3, 665 a 10: but in *Eth. Nic.* 1118 a 32 sq. they are confused,  $\phi\acute{\alpha}\rho\upsilon\nu\acute{\gamma}\xi$  there being clearly the oesophagus. A. also occasionally uses the word  $\lambda\acute{\alpha}\rho\upsilon\nu\acute{\gamma}\xi$ . By Galen's time the terms  $\phi\acute{\alpha}\rho\upsilon\nu\acute{\gamma}\xi$  and  $\lambda\acute{\alpha}\rho\upsilon\nu\acute{\gamma}\xi$  had come to be discriminated (cf. *Ind. Ar.* s.v.  $\phi\acute{\alpha}\rho\upsilon\nu\acute{\gamma}\xi$ , where Galen's definitions, XIX. 359, XVIII. B 264, 961, XIV. 715, are quoted). On the supposed difference between  $\eta\ \phi\acute{\alpha}\rho\upsilon\nu\acute{\gamma}\xi$  and  $\acute{o}\ \phi\acute{\alpha}\rho\upsilon\nu\acute{\gamma}\xi$  see Lobeck, *Phrynichus*, p. 65.

b 25.  $\delta\acute{\epsilon}\iota\tau\alpha\iota\ \dots\ 26\ \pi\rho\acute{\omega}\tau\omicron\varsigma$ , "is the first to need." Simplicius paraphrases by  $\pi\rho\acute{\omega}\tau\omicron\varsigma$ , "primarily needs breath to cool it." Them. 66, 36 sqq. H., 122, 17 sqq. Sp., *Simpl.* 149, 17—20 and *Philop.* 382, 24—28 say more precisely that

it is the heart which most needs to be cooled, and the lung because it is near the heart and shares in its warmth.

b 26. ἀναπνεομένου, int. τοῦ ἀέρος, although τὸν ἀέρα is the subject of εἰσιέναι. This use of the genitive absolute, found in other writers, is more frequent in Aristotle (cf. *Ind. Ar.* 149 b 26 sqq., also Waitz, *Organon* ad 57 a 33, Bonitz, *Metaph.* 990 b 14).

b 28. τῆς ἐν τούτοις τοῖς μορίοις ψυχῆς. We require breath where the vital force is greatest, and the heart is the seat of life. But economical nature makes a further use of the breath. It is thrown by the ψυχὴ in the organs of respiration (τὰ ἀναπνευστικὰ ὄργανα, Them. 67, 4 sq. H., 122, 25 sqq. Sp.) against the windpipe, or, strictly, against the air in the windpipe. These "organs of respiration," according to Them., are the tongue, the palate and the windpipe or φάρυγξ. This ψυχὴ strikes the air in the windpipe against the windpipe. A. thus gets a parallel to his account of hearing: air in the windpipe answers to air in the internal ear. Cf. Philop. 384, 4 sqq., who carefully points out the distinction: πλὴν ὅτι τὸ μὲν ἐν τοῖς ὡσὶν ἀκίνητόν ἐστιν καὶ αἰεὶ τὸ αὐτό, τὸ δὲ ἐν τῇ ἀρτηρίᾳ ἄλλοτε ἄλλο. Cf. Them. 67, 16 sq. H., 123, 13 sqq. Sp. Cf. the account of echo 419 a 25—27 *supra*.

b 29. ἀρτηρίαν. Here ἡ ἀρτηρία = ἡ τραχεῖα ἀρτηρία (not, as L. and S. say, ἡ ἀρτηρία τραχεῖα), i.e. ἡ τραχεῖα, the trachea or windpipe. Τὴν καλουμένην ἀρτηρίαν, "the windpipe, as it is called," because ἀρτηρία in general denotes any tube in the body, especially the arteries.

b 30. καθάπερ εἴπομεν. In 420 b 14 οὐ τῷ τυχόντι μορίῳ (cf. 420 b 12 τοῖς βραγχίοις): but the condition there stated, viz. the appropriate organ for the production of voice, is not enough.

b 31. τὸ τύπτων. That which strikes, as distinct from that upon which it strikes (τι) and the air which serves as medium (ἐν τινι), 420 b 14—16.

b 32. μετὰ φαντασίας τινός, int. δεῖ εἶναι. There must be simultaneously a mental picture, φάντασμα: Them. 67, 25 H., 123, 26 Sp. μετὰ φαντασίας σημαντικῆς. In the singular, as more often in the plural (425 b 25), φαντασία can mean the mental picture and not the faculty or operation of imagining. *Ind. Ar.* 812 a 19 etiam numerus singularis interdum ita est accipiendus [i.e. non facultatem vel actionem imaginandi significat, sed imaginem animo obversantem]. Cf. *Phys.* IV. 4, 211 b 34 ὁ τόπος διὰ τοιαύτης τινός εἶναι δοκεῖ φαντασίας, *Magna Mor.* II. 6, 1203 b 4 ὁ ἐκ τῆς προσφάτου φαντασίας ἀκρατής. σημαντικός. All voice, according to A., is indicative of something, whether feeling, desire or (in the case of men) thought. Thus it is by the presence of the image that vocal sound is mainly differentiated from mere noise.

421 a 1. ἀλλὰ τοῦτ'ω, int. τῷ ἀναπνεομένῳ πνεύματι. The subject to τύπτει must be τὸ ἐμψυχον, the animate being, τὸ τύπτων of 420 b 31. By means of the air breathed the animal causes the impact of the air in the windpipe (τὸν ἐν τῇ ἀρτηρίᾳ, int. ἀέρα) against the windpipe.

a 2. ἀναπνέοντα: cf. *Probl.* XI. 14, 900 a 39 ἐκπνέοντες, οὐκ εἰσπνέοντες φωνοῦμεν. The generic term here, as frequently, is used for the specific εἰσπνέοντα or inhaling. Cf. *infra* 421 b 14 μὴ ἀναπνέων δὲ ἀλλ' ἐκπνέων ἢ κατέχων τὸ πνεῦμα οὐκ ὁσμάται. In both passages ἀνα-πνεῖν=in-spire, ἐκ-πνεῖν=re-spire, κατέχειν [int. τὸ πνεῦμα]=hold the breath.

a 3. τοῦτ'ω. By a 1, 2 *supra* this should mean the air that is breathed, with which the air in the windpipe about to be exhaled is struck. In fact, the windpipe is the meeting place of two currents (1) the air which is being inhaled and (2) the breath from the chest, the passage of which outward is checked by ὁ κατέχων. The collision between these two currents of air sends one of

them against the edges of the windpipe and, according to 420 b 27 and 421 a 1, what is so sent is not the air in process of inhalation, as this is the instrument. So Simpl. *κινεῖ μὲν ὁ ἀναπνέων, ἔμψυχος δηλαδὴ ὧν καὶ κινούμενος ὑπὸ τῆς ψυχῆς, χρώμενος δὲ τῷ ἀναπνεομένῳ οὐ πρὸς τὸ εἰσπνεῖν ἢ ἐκπνεῖν, ἀλλὰ κατέχων, ἵνα τούτῳ ἀθρόως τύψῃ τὸν ἐν τῇ ἀρτηρίᾳ καὶ προσκρούσῃ αὐτὸν τῇ ἀρτηρίᾳ.* This interpretation is fully borne out by Them. 67, 12 H., 123, 8 Sp. *τοῦ γὰρ ἀναπνεομένου ἀέρος ἐστὶ πληγὴ [int. ἡ βῆξις, sic Them.], ἡ φωνὴ δὲ οὐχὶ τούτου πληγὴ, ἀλλὰ τούτῳ· τούτῳ γὰρ τύπτει τὸν ἀπειλημμένον τῇ ἀρτηρίᾳ...ὁ μὲν ἀναπνεόμενος ἀπὸ τὸν ἐν τῇ ἀρτηρίᾳ πλήττει, οὗτος δὲ αὐτὴν τὴν ἀρτηρίαν...δεῖ γὰρ κατασχεῖν τὸν εἰσπνεύσαντα ἀέρα καὶ οὕτω πληῖσαι τὸν εἶσω.* Philop. 384, 2 sqq. also supports *τούτῳ*, though, according to him, it is with the air which he is restraining from exit that *ὁ κατέχων* sets in motion the air which is being inhaled.

**a 6. ἑτερός ἐστι λόγος.** See *De Part. An.* III. 6, 669 a 2 *ἀνάγκη δὲ καταψύχειν ἔξωθεν [int. τὸ θερμόν] ἢ ὕδατι ἢ ἀέρι.* διόπερ τῶν μὲν ἰχθύων οὐδεὶς ἔχει πλεύμονα, ἀλλ' ἀντὶ τούτου βράγχια, καθάπερ εἴρηται ἐν τοῖς περὶ ἀναπνοῆς· ὕδατι γὰρ ποιεῖται τὴν κατάψυξιν, *De Resp.* 9, 474 b 25 *ἐπεὶ δὲ τῶν ζώων τὰ μὲν ἔνυδρα, τὰ δ' ἐν τῇ γῇ ποιεῖται τὴν διατριβήν, τούτων τοῖς μὲν μικροῖς πάμπαν καὶ τοῖς ἀναιμοῖς ἢ γινωμένῃ ἐκ τοῦ περιέχοντος ἢ ὕδατος ἢ ἀέρος ψύξις ἱκανὴ πρὸς τὴν βοήθειαν τῆς φθορᾶς ταύτης· μικρὸν γὰρ ἔχοντα τὸ θερμόν μικρὰς δέονται τῆς βοηθείας... (475 a 9) κινουσί γὰρ [int. τὰ ἔντομα, e.g. bees, wasps, cockchafers and other insects which hum] τὸν τόπον τοῦτον, ὥσπερ τὰ ἀναπνέοντα ἔξωθεν τῷ πλεύμονι καὶ οἱ ἰχθύες τοῖς βραγχίοις.* See also *De Resp.* 10, 476 a 1 *ὅσα δὲ βράγχια κτέ.*

## CHAPTER IX.

**421 a 7—422 a 7.** The nature of smell and its object are less easy to determine than that of sight or hearing, this sense not being developed in us to the same degree of delicacy as in the other animals [§ 1]. Our position in regard to smell is comparable to that of the hard-eyed animals in respect of sight. The superiority of man on the other hand is shown especially in touch [§ 2]. Varieties of odour correspond to and are named from varieties of flavour, the latter being the more clearly distinguishable [§ 3]. Smell conforms to the analogy of the other senses and has as its object the inodorous (i.e. that which has a faint smell or none at all) as well as the odorous [§ 4]. The medium of smell is air or water, as is clear from the fact that animals, whether living in the water, in the air, or on land, all scent their food [§ 5]. It is only while inhaling breath that man can smell: a trait peculiar to man [§ 6]. The organ of smell, in man and other animals that inhale breath, has a protection, not possessed by other species, namely the nostril, just as the eyes of all but hard-eyed animals have lids [§ 7]. The object of smell is dry, while the object of taste is moist [§ 8].

With this chapter should be compared *De Sensu* c. 5, 442 b 27—445 b 1 which serves partly to illustrate, partly to supplement the present discussion, the most important addition there made being the distinction between two kinds of *ὁσφραντόν*. The first is that discussed in this chapter, the second causes a purely aesthetic pleasure, which only man feels; the scent of flowers is the best example of this second kind (443 b 17 sqq.). The *ὁσφραντόν* treated in our present chapter is classified by A. on the analogy of flavours, 421 a 26 sqq.

421 a 7. τῶν εἰρημένων, int. αἰσθήσεών τε καὶ αἰσθητῶν, viz. sight and hearing and their respective objects.

a 8. ἡ ὄσμη here means "odour," i.e. τὸ αἰσθητόν, as is shown by its co-ordination with sound and colour. The word is in itself ambiguous (like ὄψις, ἀκοή, αἰσθησις) and is used sometimes (subjectively) like ὁσφρησις of the faculty or act of perception, sometimes of the object perceived, odour, ὁσφραντῶν, and sometimes to cover both (like our words "smell" and "scent").

a 9 οὐκ ἔχομεν ἀκριβῆ...το ζῶων. The remark is repeated in *De Sensu* 4, 440 b 31—441 a 3 as follows: "of all animals we have the poorest sense of smell; it is the poorest, too, of all our own senses, whereas of all animals we have the most delicate sense of touch, and taste is a sort of touch." Accordingly in *De Sensu* A. first discusses flavours and uses the results thus obtained for the explanation of odours. ἀκριβῆ, "precise" and so "delicately discriminating," like the Latin *subtilis*.

a 12. ἄνευ τοῦ λυπηροῦ ἢ τοῦ ἡδέος. That is, unless the odour is sufficiently marked or powerful to produce positive pain or pleasure. We are conscious only of the intense forms. In other senses (e.g. taste) you can have intellectual discrimination of flavour etc. apart from the gratification of appetite.

a 13. οὕτω, φαύλως, μὴ ἀκριβῶς, i.e. ἀμβλύτερον; see next note. τὰ σκληρόφθαλμα. Cf. *De Sensu* 5, 444 b 25, "some animals have eye-lids which they must open in order to see, while hard-eyed creatures have none, and so have no need of anything with which to uncover them, but see directly." Cf. also *De Part. An.* II. 13, 657 b 29 sqq.: "fishes, insecta and hard-skinned animals [e.g. beetles] have eyes of various types, but are all without eyelids. The hard-skinned animals are absolutely devoid of such protection for their eyes, and instead have hard eyes; the eyelid, so to speak, has adhered to the eye and they see through it (οἷον βλέποντα διὰ τοῦ βλεφάρου προσπεφυκότας): hence their sight is comparatively dim (ἀμβλύτερον βλέπειν). Fishes are not hard-eyed, but have soft or watery eyes (ὕγρόφθαλμοι, *De Part. An.* 658 a 3, 9)." It would seem that insects and beetles are the chief instances of hard-eyed animals.

a 15. πλὴν τῷ φοβερῷ καὶ ἀφόβῳ. So long as a telepathic sense like sight gives its possessor a danger-signal and warns him of the approach of something pernicious or destructive, it fulfils one of its main ends: 434 b 24 sqq., *De Sensu* I, 436 b 20 σωτηρίας ἕνεκεν ὑπάρχουσιν, ὅπως...τὰ φαῦλα καὶ τὰ φθαρτικὰ φεύγωσι. οὕτω δὲ καὶ τὰς ὁσμάς, int. μὴ διαδήλους ἔχειν or the like. As the verb (αἰσθάνεσθαι) in the positive half of the preceding sentence takes a genitive, we have to think of some transitive equivalent, such as ἔχειν or κρίνειν, to govern τὰς ὁσμάς.

a 17. ἀνάλογον ἔχειν, int. τὴν ὁσφρησιν, which is the subject of ἔχειν: with ἀνάλογον we find πρὸς c. acc., as here and *Pol.* 1271 b 40, or the dative as in the next line 421 a 18, and 1272 b 37 sq. ὁμοίως, int. ἀνάλογον ἔχειν, the subject being τὰ εἶδη τῶν χυμῶν. Previously we have had διαφοραὶ for the distinctive species of the sensible object (e.g. 420 a 26): cf. 423 b 27. This analogy between flavours and smells is further developed *infra* a 26 sqq. and is repeated in *De Sensu* 5, 442 b 27, 443 b 12—15, 443 b 19, 445 a 29—b 1, and it is upon this analogy that A.'s explanation of the process of smell is based.

a 18. τοῖς τῆς ὁσμῆς, int. εἶδεσιν. ἀκριβεστέραν, i.e. as compared with smelling. See again *De Sensu* 4, 440 b 30 ἐναργέστερον δ' ἐστὶν ἡμῖν τὸ τῶν χυμῶν γένος ἢ τὸ τῆς ὁσμῆς. Thus smell is inferior not only to sight and hearing (421 a 7 sq.), but also to taste.

a 19. ταύτην δ' ἔχειν τὴν αἰσθησιν, i.e. touch.

a 20. ἀκριβεστάτην, i.e. "because touch is the most exact of man's senses," not "is more exact in man than in any other animal." The latter fact is

adduced in the next clause to prove the former. If man falls short of the brutes in the other senses and rises above them in touch, touch must be his most exact sense. Cf. *De Part. An.* II. 16, 660 a 12 sq.

a 21. πολλῶν τῶν ζῴων...πολλῶ τῶν ἄλλων. The critical notes amply justify this reading. Bekker made an unlucky choice when, finding πολλῶ...πολλῶ in E and other MSS., he changed the second πολλῶ instead of the first into πολλῶν.

a 22. ἀκριβοῖ. For this intransitive use of ἀκριβοῦν cf. *Poet.* 1450 a 36 πρότερον δύνανται τῇ λέξει...ἀκριβοῦν ἢ τὰ πράγματα συνίστασθαι [*συνιστάναι*, Thurot], *De Gen. An.* IV. 7, 778 a 4 βούλεται μὲν οὖν ἡ φύσις τοῖς τούτων ἀριθμοῖς ἀριθμεῖν τὰς γενέσεις καὶ τὰς τελευτάς, οὐκ ἀκριβοῖ δὲ and V. 1, 780 b 25 τοῦτο (int. τὸ ζῶν) περὶ μὲν τὰς διαφορὰς οὐκ ἀκριβώσκει τῶν χρωμάτων.

a 23. παρὰ τὸ αἰσθητήριον τοῦτο, i.e. owing to the tactile organ, which A. identifies with σὰρξ in the next sentence, though in c. 11 we learn that the true organ of touch is internal, flesh and skin being merely a medium.

a 25. τὴν διάνοιαν, to be taken closely with ἀφνεῖς, "poorly endowed in intellect": κατὰ might have been used to define this accusative, as we see from *Pol.* 1283 a 26 ἐπεὶ δ' οὔτε πάντων ἴσον ἔχειν δεῖ τοὺς ἴσους ἐν τι μόνον ὄντας οὔτε ἄνισον τοὺς ἀνίσους καθ' ἐν, *Plato Rep.* 409 E αἱ τῶν πολιτῶν σοὶ τοὺς μὲν εὐφνεῖς τὰ σώματα καὶ τὰς ψυχὰς θεραπεύουσιν, τοὺς δὲ μή, ὅσοι μὲν κατὰ σῶμα τοιοῦτοι, ἀποθυήσκειν ἐάσουσι, τοὺς δὲ κατὰ τὴν ψυχὴν κακοφνεῖς καὶ ἀνιάτους αὐτοὶ ἀποκτενοῦσιν.

a 26 ἔστι δ', ὥσπερ χυμὸς...27 καὶ ὁσμαί, "just as flavour is sometimes bitter, sometimes sweet, so with odours." Plato had denied (*Tim.* 66 D) that odours could be classified: περὶ δὲ δὴ τὴν τῶν μυκτῆρων δύναμιν, εἶδη μὲν οὐκ ἔνι, his reason being that all odours are subtler than water and coarser than air, while our veins in the nostrils are formed too narrow for earth and water and too wide for fire and air. A. must be controverting this statement in *De Sensu* 5, 443 b 17 sq. As Professor Beare points out (p. 143), modern psychologists incline to Plato's view, though not of course on the same grounds. Having begun the sentence with ἔστι δέ, A. might have been expected to end it with οὕτω καὶ ἡ ὁσμὴ. But the distribution of χυμὸς into ὁ μὲν and ὁ δὲ so forcibly suggests plurality that, in spite of the initial singular, we have ὁσμαί, int. εἰσίν.

a 27. ἀλλὰ τὰ μὲν, int. τῶν ὁσφραντῶν or τῶν σωματῶν. The plural verb ἔχουσι more *Aristoteleio* after τὰ μὲν. This sentence ἀλλὰ...29 τοῦναντίον is virtually a parenthesis, as Miss Alford suggests.

a 31 μὴ σφόδρα...32 χυμοῦς, "because odours are not, like flavours, very clearly distinguished." The accusative by assimilation, τοὺς χυμοῦς, is perfectly regular. Cf. *Thuc.* VI. 68, 2 ἄλλως τε καὶ πρὸς ἀνδρας...οὐκ ἀπολέκτους ὥσπερ καὶ ἡμᾶς.

a 32. ἀπὸ τούτων, int. τῶν χυμῶν. The singular εἶληφε shows that the subject is ἡ ὁσμὴ, collective.

421 b 1. καθ' ὁμοιότητα τῶν πραγμάτων. "The things" which are "similar" are odours and flavours, e.g. the sweet flavour and sweet odour of honey or the bitter flavour and bitter odour of thyme. We recognise the resemblance in the act of perceiving them. Such sensible qualities are πράγματα in contradistinction to the terms used to describe them. The degree of community indicated by a common name may be relatively slight, as A. often reminds us: see the cautious remarks 414 b 20—33, *Pol.* 1275 a 33—b 5 in reference to such terms as "soul" and "citizen." *Simpl.* 153, 27—154, 1 goes too far afield when he enquires into the physical grounds of the relation between flavour and odour, with which we are not here concerned. What he says, κατὰ τὰ πράγματά ἐστι συγγένεια τοῖς ὁσφραντοῖς πρὸς τὰ γευστὰ διὰ τὴν τοῦ ἐγγύμου ἀπόπλυσιν ἐν τῷ

κοινῷ αἶρος τε καὶ ὕδατος ὑγρῷ, is taken from *De Sensu* 5, 443 b 3—16: cf. 445 a 13 sq. We have καθ' ὁμοιότητα λέγεται φωνεῖν 420 b 6 sq.

b 1 ἡ μὲν γὰρ γλυκεία...2 ποιούτων. It is conceivable that "the sweet odour," ἡ γλυκεία (int. ὁσμῇ), is the subject, the predicate being "comes from saffron and honey." But it is more probable that A. is here only adducing examples. In that case ἡ μὲν is the subject, "the one odour," and γλυκεία the predicate, "is sweet," saffron and honey being adduced without any comparative οἶον and without the article, so that οἶον ἡ [ἀπὸ τοῦ] κρόκου καὶ μ. would have been the fuller version. This is the way in which Argyropylus appears to have interpreted the words: "alius enim est dulcis, ut croci mellisque, alius acer, ut thymi ac huiusmodi rerum." Or we might say that οἶσα must be understood with the words in apposition, κρόκου καὶ μέλιτος. But why, we ask, ἀπὸ τοῦ κρόκου parallel to the simple genitive θύμου? Such deliberate variation is more in the manner of Tacitus than of A., and accordingly I follow Torstrik in bracketing ἀπὸ τοῦ. Torstrik's note is as follows: Legebatur ἡ μὲν γὰρ γλυκεία ἀπὸ τοῦ κρόκου καὶ τοῦ μέλιτος, intell. εἴληφε τὸ ὄνομα. Sed verum non est odorem dulcem a croco esse appellatum: nam dulcem dicimus, non croceum odorem. Qui ἀπὸ τοῦ addidit, debebat certe eadem addere ante θύμου, b 2: id quod in iis libris factum videmus e quibus Basileensis et Aldina derivatae sunt editiones. Verba quae huic interpolationi ansam dederunt, leguntur b 1 καθ' ὁμοιότητα τῶν πραγμάτων, quae πράγματα bonus vir putavit esse τὸν κρόκον et τὸ μέλι et τὸν θύμον. Imo quas res A. dicit esse similes, sunt ἡ ὁσμῇ ἡ γλυκεία et ὁ χυμὸς ὁ γλυκὺς, item ἡ ὁσμῇ ἡ δριμύς et ὁ χυμὸς ὁ δριμύς. Inter haec saporis praedicti sunt nominibus, odores per se carent: sed quum odor quisque saporis cuiusque similis sit, etiam nomen traxit ab eo. Cf. *De Sensu et Sens.* 4, 440 b 30 (p. 157).

b 3. τὸν αὐτὸν δὲ τρόπον, int. ἔχει.

b 5. ἡ δὲ, i.e. ὅψις. καὶ ἡ ὁσφρησις, "so smell," τοῦ ὁσφραντοῦ καὶ ἀνοσφραν-  
του, int. ἔστι. Here καὶ, "so," answers to ὥσπερ 421 b 4. See 417 b 18, *note*.

b 6. ἀνόσφραντον δὲ, int. ἐστὶ: cf. 418 b 28 ἄχρουν δ' ἐστὶ τὸ διαφανὲς καὶ τὸ ἀόρατον ἢ τὸ μὲν δρώμενον, οἶον δοκεῖ τὸ σκοτεινόν.

b 7. παρά, "on account of," *propter*; cf. 421 a 23.

b 8. καὶ τὸ φαύλην, int. ἔχον. Cf. 421 a 10 φαύλως ὁσμάται, 422 a 28 ἐὰν μὴ ἔχῃ τὴν φαύλως, which point to the meaning "defective," "inadequate," both here of feeble scent and 422 a 30 of insipid flavour, and therefore almost certainly also 422 a 32 γεύσις...φαύλη καὶ φθαρτικὴ τῆς γεύσεως. If so, there can be little difference here between μικρὰν and φαύλην.

b 9. διὰ τοῦ μεταξύ, οἶον αἶρος. Cf. 419 a 25—b 3, especially the words (a 32) κοινὸν γὰρ δὴ τι πάθος ἐπ' αἶρος καὶ ὕδατος ἐστίν. In the case of smell this medium is termed δίοσμον; see *note* on 419 a 32. οἶον here means "namely," or "that is," as in 415 a 22 (see *note*). A good instance of this meaning is *De Sensu* 5, 445 a 7, 8: cf. *Eth. Nic.* 1102 a 27, 1144 a 19, 1154 a 9.

b 10. καὶ γὰρ τὰ ἔνυδρα. The mention of water as the medium leads up to the enquiry: how can aquatic and bloodless animals smell, if they do not breathe the air? τὰ ἔνυδρα...καὶ ἔναιμα καὶ ἀναιμα. Exactly parallel to 421 b 22 τοῦ ὁσφραντοῦ καὶ δυσώδους καὶ εὐώδους and 426 b 2 ἡ ἰσχυρὰ ὁσμῇ καὶ γλυκεία καὶ πικρά, which Torstrik cites. The superiority of cod. E here is evident. In the absence of punctuation a pause after αἰσθάνεσθαι would be likely to introduce δὲ after ὁμοίως, and this had been done by the time of Philop., who comments quite in the style of a modern editor: "ὁμοίως δὲ...ἀναιμα is parenthetical; if δὲ be omitted the syntax becomes clear": (392, 35) τοῦτο μεταξύλογία ἐστίν. ἔστι δὲ τὸ ἀκόλουθον τῆς συντάξεως τοῦ ῥητοῦ οὕτως. καὶ γὰρ

τὰ ἐνυδρα δοκοῦσιν ὁσμῆς αἰσθάνεσθαι, ὥσπερ καὶ τὰ ἐν τῷ ἀέρι. εἴτα τὸ ἐξῆς κατασκευαστικὸν τοῦ ὁσφραίνεσθαι τὰ ἐνυδρα, <καὶ> γὰρ τούτων ἔνια πόρρωθεν ἀπαντᾷ πρὸς τὴν τροφήν· τούτων δηλονότι τῶν ἐνύδρων. τὸ δὲ ὁμοίως δὲ καὶ τὰ ἔναιμα καὶ τὰ ἄναιμα ἐπὶ τε τῶν ἐνύδρων καὶ τῶν ἐν τῷ ἀέρι· ἐν ἀμφοτέροις γὰρ ἔστω αὕτη ἢ διαφορά· ὁσφραίνονται δὲ καὶ τὰ ἄναιμα, οἷον τὰ ἔντομα. ἐὰν δὲ περιττεύῃ ὁ δὲ τοῦ ὁμοίως δέ, καθαρὰ γίνεται ἡ σύνταξις. On the sense of smell in non-breathing animals, cf. *De Sensu* 5, 443 a 2 sqq., 444 b 7 sqq. Indeed, the sequence of topics in the latter passage as far as 445 a 1 very closely resembles that in the present chapter 421 b 9—422 a 3. See note on 421 b 13 *infra*.

b 12. τούτων. Doubtless water-animals, as understood by Philop. (see last note) and Simpl. 154, 9 πρὸς το δέλεαρ σπεύδοντες. There is no point in saying here that animals which live in the air follow their prey by scent: the new idea is that this is done by aquatic, i.e. non-breathing animals. Cf. *De Sensu* 5, 444 b 8 καὶ γὰρ ἰχθύες καὶ τὸ τῶν ἐντόμων γένος πᾶν ἀκριβῶς καὶ πόρρωθεν αἰσθάνεται, διὰ τὸ θρεπτικὸν εἶδος τῆς ὁσμῆς, ἀπέχοντα πολὺ τῆς οἰκείας τροφῆς... (b 13) καὶ τῶν θαλαττίων αἱ πορφύρα. ἀπαντᾷ πρὸς. Cf. *Pol.* 1258 a 13 πρὸς τὸ τέλος ἅπαντα δέον ἀπαντᾶν. ὕψισμα. This word, used here only, is framed on the analogy of ὑπήκοος (cf. also ὑπαίθριος, ὑπομβρος, ὑπόσκιος) and means "guided by scent," "odori quasi obnoxia," as Trendelenburg has it.

b 13. ἄπορον φαίνεται, εἰ. The εἰ clause is used as after θαυμαστόν: and the ὥστε clause (b 19 sqq.) gives the inference suggested as following from the discrepancy, καὶ τὸ μὲν...πειρωμένοις (b 17—19) being a parenthesis. "It is felt as inexplicable (or 'puzzling') that while all animals alike have perception by smell, man perceives smell (only) when inhaling breath, and when not inhaling but breathing out or holding the breath has no perception of a smell either far or near, not even if the thing with odour is placed at the nostril or within it,...so that bloodless animals, since they do not inhale breath, would seem to have some different sense not included in the regular list of five." We shall be driven to assume that they have a sixth sense.

If this is right, the force of ὁμοίως may be no stronger than in b 10, emphasising rather the fact that all have smell, than that all smell in the same manner. The true solution, according to A., is that, though all alike smell, all do not smell in the same way (b 25 sqq.), but the possibility of different processes is here for the moment ignored, the inference being suggested (in order to be rejected) that the ἄναιμα do not smell at all.

The same point is raised in *De Sensu* 5, 444 b 15 ὅτι δὲ αἰσθάνεται (int. τὰ μὴ ἀναπνέοντα τῶν ζώων) οὐχ ὁμοίως φανερόν...445 a 4. This passage is almost a duplicate of 421 b 13—422 a 3 of this chapter and forms such an excellent commentary that I append a translation of part of it. It will be noticed that, as to the precise process by which non-breathing animals smell, A. is not more explicit in the one passage than in the other. "By what means they thus perceive is not so clear. The point therefore might here be raised, with what organ they perceive odour, if we assume that smelling takes place in the act of inhaling breath, and in this way only (μοναχῶς); for it is a fact that all breathing animals do thus smell, whereas no one of the animals we are now considering breathes, and nevertheless they perceive odours. With what organ, then, can they perceive, if there is not some other sixth sense? But this is impossible, for smell is the sense for odours, and these they perceive, but not perhaps in the same way as breathing animals. The explanation is rather this, that in breathing animals the breath lifts up what covers over the sense-organ, as a sort of lid (and hence if they do not breathe, they do not smell), whereas in non-breathing animals there is no such lid to be lifted. It is the same here as



with the eyes; some animals have lids which they must open in order to see, while hard-eyed creatures have none, and so have no need to open them, but see, with what ability they have of seeing, directly. Likewise also none of the other animals is in the least disturbed by the smell of things essentially bad-smelling unless it happens to be something noxious. But they are killed by the odours which are noxious, just as men are stupefied and often killed by the fumes of charcoal."

b 14. ὁ δ' ἄνθρωπος ἀναπνέων, int. ὁσμάται.

b 16. οὐδ' ἄν...τεθῆ, int. τὸ ὁσφραντόν. The parallel experiment establishing the existence of a medium for sight is mentioned 419 a 12: cf. for hearing and smell 419 a 28 sq. and for the contrast presented by touch and taste 423 b 17—26.

b 18. κοινὸν πάντων. Whether we understand by πάντων all animals or all sensible objects depends upon whether we adhere to ἐπὶ τῶν ἀνθρώπων in a 19 or change to ἐπὶ τῶν ὁσφραντῶν. I think the alteration, though plausible, unnecessary and am content to understand here κοινὸν πάντων τῶν ζώων. ἀλλὰ τὸ ἄνευ τοῦ ἀναπνεῖν. On this question, in what sense animals can be understood to smell without inhaling, we have, as mentioned above, a parallel and fuller disquisition in *De Sensu* 5, 444 b 15 sqq.

b 19. ἴδιον ἐπὶ τῶν ἀνθρώπων. Taken literally, this is not true. Other air-breathing animals also smell while inhaling breath. To meet this difficulty Hayduck proposes to substitute ἐπὶ τῶν ὁσφραντῶν for ἐπὶ τῶν ἀνθρώπων. The meaning would then be: "It is indeed universally true of all objects of sense that the object is not perceived when it is put directly on the organ, but the fact that we do not perceive without inhaling breath is a peculiarity of objects of smell." Another way is to water ἴδιον down to μίλιστα ἴδιον. Philop. (393, 9), always honest, says "man is adduced as a specimen of air-breathing animals," οἷον ἄνθρωπος καὶ πάντα τὰ ἔχοντα πνεύμονα (τὸν γὰρ ἄνθρωπον ἔλαβε παράδειγμα ἀντὶ πάντων τῶν ἀναπνεόντων). If this were the only place in the chapter where A., meaning "animals which breathe the air," says "men," it would be worth while to emend. But we have already had such a case, b 14, and we have only to read as far as b 24 ὑφ' ὧν περ ἄνθρωπος and b 26 ἔοικε δὲ τοῖς ἀνθρώποις κτέ. to find man again adduced as a type: although in 422 a 1 sq. by mentioning respiration of "animals which receive the air" A. certainly corrects the impression which b 26 τοῖς ἀνθρώποις suggests, if literally interpreted, viz. that the olfactory organ in man is different from that of all other animals. Alex. Aphr. in his commentary on *De Sensu* (99, 16 sqq. W) supposed that in 5, 444 a 3, 8 A. had shown a similar carelessness because, while there describing the aesthetic sensation of fragrance as peculiar to man, he goes on to speak, a 19—21, of some sense of smell conditioned by respiration as being shared by man with other sanguineous air-breathing animals. It is possible to interpret 444 a 19—21 as applying to the sensation of odour in general and not of the aesthetic fragrance last mentioned. (See Mr G. R. T. Ross *ad loc.*) But the context favours Alexander's interpretation, and in any case A. cannot be acquitted of negligence in not indicating the transition to odour in general.

b 19. ὥστε τὰ ἄναιμα. Bloodless animals do not inhale breath. If, therefore, such inhalation is necessary to smelling (as it certainly is in the case of man and air-breathing animals generally), bloodless animals cannot smell. But such a sweeping conclusion is contrary to the facts, as above stated (b 10 sqq.). What alternatives are possible? We may say they perceive odour, not by the sense of smell, but by a sixth sense. This hypothesis, introduced by ὥστε, proves to be untenable. To perceive odour ἴς to smell: cf. 424 b 5 sq. If this way of escape be cut off, the only explanation consonant with the facts is that

given b 25 sq. *infra* (cf. *De Sensu* 5, 444 b 20 sq.): bloodless animals smell, but without inhaling breath.

b 20 ἀν...21 ἔχοι. The potential optative states the inference: "would have" = "must have on that supposition." Cf. 412 a 17, 424 a 26 and *note* on 403 a 9. The implied condition is best seen from Plato *Apol.* 28 B, C φαῦλοι γὰρ ἀν τῷ γε σῶ λόγῳ εἶεν.

b 21. ἀλλ' ἀδύνατον. More clearly in 424 b 5 referred to above: εἰ δὲ τὸ ὀσφραντὸν ὁσμή, εἴ τι ποιεῖ, τὴν ὀσφρησιν ἢ ὁσμή ποιεῖ. ὥστε τῶν ἀδυνάτων ὀσφρανθῆναι οὐθέν οἶόν τε πάσχειν ὑπ' ὁδμῆς, and 424 b 16. Cf. also 425 b 17 εἰ γὰρ τὸ τῇ ὀψει αἰσθάνεσθαι ἐστὶν ὁρᾶν.

b 23. ἔτι δὲ καὶ φθειρόμενα φαίνεται, int. τὰ ἀναιμα. A second argument to prove that bloodless animals do smell without inhaling breath. A. seems to have hesitated as to whether it is the smell that destroys in such cases. The argument here implies that it is; in 435 b 9 sqq. it is the organ of smell, and not the animal itself that is destroyed. Cf. 424 a 29, b 10 sq., where see *notes*, and *De Sensu* 5, 444 b 28 sqq. (see *note* on 421 b 13) ὁμοίως δὲ καὶ τῶν ἄλλων ζῴων ὅτι οὐδὲν δυσχεραίνει τῶν καθ' αὐτὰ δυσωδῶν τὴν ὁσμήν, ἀν μὴ τι τύχη φθαρτικὸν ᾖ. ὑπὸ τούτων δ' ὁμοίως φθείρεται καθάπερ καὶ οἱ ἄνθρωποι ὑπὸ τῆς τῶν ἀνθρώπων ἀτμίδος καρηβαροῦσι καὶ φθείρονται πολλάκις. οὕτως ὑπὸ τῆς τοῦ θείου δυνάμεως καὶ τῶν ἀσφαλωδῶν φθείρεται τὰλλα ζῶα, καὶ φεύγει διὰ τὸ πάθος.

b 25. ὀσφράνεσθαι μὲν οὖν, int. τὰ ἄναιμα.

b 27. τὸ αἰσθητήριον τοῦτο, "the olfactory organ." A. goes on to show that the part played by the nostril is analogous to that of the eyelid. Hard-eyed animals are destitute of eyelids and perceive, however imperfectly, without the previous action of removing an obstruction, εὐθὺς ὁρᾷ (421 b 31). Similarly the animals with which man is contrasted have no nostril to dilate and do not inhale air in order to smell. τῶν ἄλλων ζῴων. This is not true of all other animals. Them. (69, 29 H., 127, 23 Sp.) vaguely gives τὰ ἔντομα (insecta), for "the other animals" as opposed to τὰ ἔναιμα, sanguineous animals: εἰοικεν οὖν τοῖς ἐναιμοῖς διαφέρειν τὸ αἰσθητήριον τοῦτο τῶν ἐντόμων. Thus it seems that he found it necessary to render more precise the antithesis between "man" and "the other animals," which I prefer to treat as one more instance of A.'s carelessness in matters of detail. Philop., when he comes to explain 421 b 26, opposes τὰ ἀναπνέοντα to τὰ μὴ ἀναπνέοντα (395, 8, 10).

b 28. τὰ μὲν γὰρ, int. ὅμματα τῶν ἀνθρώπων. With the neuter article τὰ it would be equally easy to understand τῶν ζῴων, the group of animals, including man, which is contrasted with τὰ σκληρόφθαλμα. But, on the whole, the former view seems the more natural, and, if this is chosen, no change of gender is involved in κινήσας or ἀνασπᾶσας, but only the quite usual change of number.

b 29. φράγμα, "a fence or protection." In *De Part. An.* II. 13, 657 a 25 it is called φυλακή: καὶ οἱ μὲν ἄνθρωποι καὶ οἱ ὄρνιθες καὶ τὰ ζωοτόκα καὶ τὰ φυτόκα τῶν τετραπόδων φυλακὴν ἔχουσι τῆς ὄψεως. Ἐλυτρον. The phrase in the *De Sensu* 5, 444 b 22 is ὥσπερ πῶμά τι, "lid" or "cover." δ. The relative is the object of the two participles κινήσας and ἀνασπᾶσας, the verb ὁρᾷ being used absolutely.

b 30. ἀνασπᾶσας οὐχ ὁρᾷ, int. ὁ ἄνθρωπος or ὁ ὁρῶν or simply τις. See *note* on 403 a 22.

b 31. ἀλλ' εὐθὺς ὁρᾷ τὰ γινόμενα, see without any such delay: they have not to wait to lift the eyelid before seeing. Cf. *De Sensu* 5, 444 b 27 ἀλλ' ὁρᾷ ἐκ τοῦ δυνατοῦ ὄντος αὐτοῦ [leg. αὐτοῖς] εὐθύς. ἐν τῷ διαφανεῖ, in air or water, animals being supposed to live in the one element or in the other: cf. 435 b 21 ἐπεὶ ἐν ἀέρι καὶ ὕδατι, ὅπως ὁρᾷ, ὅλως δ' ἐπεὶ ἐν διαφανεῖ, 423 a 29—b 1, 422 a 11.

422 a 1 ἀκάλυφες εἶναι...<sup>2</sup> ἔχειν ἐπικάλυμμα. These infinitives depend on *εἰσὶν* continued or understood from above (b 26).

a 2. δ ἀναπνεόντων ἀποκαλύπτεσθαι. The same uncertainty arises in regard to τοῖς μὲν...τοῖς δὲ here as was noticed above in *note* on 421 b 28. Them. completes τοῖς μὲν ἐντόμοις...τοῖς δὲ ἀναπνεύουσιν. Philop. understands as τὰ μὴ ἀναπνεύοντα ζῶα opposed to τὰ ἀναπνεύοντα, which, as before, he supposes man to represent: (395, 8) οὕτω καὶ ἐπὶ τῆς ὁσφρήσεως τὰ μὲν ἀναπνεύοντα τῶν ζῶων εἰκόσκι προκάλυμμα τι καὶ ἔλκτρον τοῦ ὁσφραντικοῦ μορίου ἔχειν ἀσθενεστέρον κατὰ τὸ εἶδος τυγχάνοντος, τοῖς δὲ μὴ ἀναπνεύουσιν ἀκάλυφες τε εἶναι τὸ αἰσθητήριον τοῦτο.

a 4. ἐν τῷ ὕγρῳ. Here and in the next line these words must mean "in the water," *not* "in what is liquid" in general, which would include air. Man and air-breathing animals can smell in the air, but not in the water.

a 6. ἔστι δ'...τοῦ ὕγρου. The partitive genitives ξηροῦ and ὕγρου are used predicatively. See *note* on 402 a 1. Odour ranks with, belongs to, or consists of the solid and dry, flavour of the liquid and moist. The quality denoted by ξηρόν requires some limitation: elsewhere it is called specifically τὸ ζεγχυμὸν ξηρόν. Simpl. (154, 30) ἐν γὰρ τῷ διόσμῳ ἐναποπλυνόμενον τὸ ἐγγχυμὸν ξηρόν τὸ ὁσφραντὸν ἐργάζεται, ὡς ἐν τῷ Περι αἰσθήσεως καὶ αἰσθητῶν ἐρεῖ· τὸ δὲ γευστὸν καὶ ξηρόν ἦ, οὐ γίνεται αἰσθητὸν τῇ γεύσει κατὰ τὸν χυμὸν μὴ ὑγραθέν. Cf. Soph. 93, 11—31, who remarks that τὸ ξηρόν is not to be understood as wholly destitute of moisture nor τὸ ὕγρον as wholly destitute of dryness: odour is preponderantly solid and dry, flavour preponderantly the reverse. It must be remembered that air as well as water is ὕγρον. The summary statement in the text receives much-needed elucidation from the explanation afforded by *De Sensu*, c. 5. A. there says that odours correspond to flavours and their operation on sense must be similarly explained: (442 b 27) τὸν αὐτὸν δὲ τρόπον δεῖ νοῆσαι καὶ περὶ τὰς ὁσμάς· ὅπερ γὰρ ποιεῖ ἐν τῷ ὕγρῳ τὸ ξηρόν, τοῦτο ποιεῖ ἐν ἄλλῳ γένει τὸ ἐγγχυμὸν ὕγρον, ἐν ἀέρι καὶ ὕδατι ὁμοίως, (443 a 6) εἰ οὖν τις θείη καὶ τὸν ἀέρα καὶ τὸ ὕδωρ ἄμφω ὑγρά, εἴη ἂν ἡ ἐν ὕγρῳ τοῦ ἐγγχύμου ξηροῦ φύσις ὁσμή, καὶ ὁσφραντὸν τὸ τοιοῦτον, (443 b 3) ὅτι μὲν οὖν ἐνδέχεται ἀπολαύειν τὸ ὕγρον καὶ τὸ ἐν τῷ πνεύματι καὶ τὸ ἐν τῷ ὕδατι καὶ πάσχειν τι ὑπὸ τῆς ἐγγχύμου ξηρότητος, οὐκ ἄδηλον· καὶ γὰρ ὁ ἀὴρ ὕγρον τὴν φύσιν ἐστίν. ἔτι δ' εἴπερ ὁμοίως ἐν τοῖς ὕγροις ποιεῖ καὶ ἐν τῷ ἀέρι οἷον ἀποπλυνόμενον τὸ ξηρόν, φανερόν ὅτι δεῖ ἀνάλογον εἶναι τὰς ὁσμάς τοῖς χυμοῖς. ἀλλὰ μὴν τοῦτο γε ἐπ' ἐνίων συμβέβηκεν· καὶ γὰρ δριμύειαι καὶ γλυκεῖαι εἰσιν ὁσμαὶ καὶ αὐστηραὶ καὶ στρυφναὶ καὶ λιπαραὶ, καὶ τοῖς πικροῖς τὰς σαπρὰς ἂν τις ἀνάλογον εἴποι. διὸ ὥσπερ ἐκεῖνα δυσκατάπιστα, τὰ σαπρὰ δυσανάπνευστά ἐστιν. δῆλον ἄρα ὅτι ὅπερ ἐν τῷ ὕδατι ὁ χυμός, τοῦτ' ἐν τῷ ἀέρι καὶ ὕδατι ἡ ὁσμή. The medium or vehicle, whether air or water, is ὕγρον, liquid, not solid. Flavour, or the dry substance possessing flavour, τὸ ἐγγχυμὸν ξηρόν, when further subjected to the influence of moisture in air or water by the process of ἀπόπλυσις, yields odour. For it is clear, says A., that air and water can derive something from, and be affected by, the dry substance possessed of flavour, which has been washed and, as it were, dissolved in them. Odour is perceived when the dry thing possessed of flavour affects the animal by the medium of air or water (both conceived as "moist or liquid") without itself being moist. Flavour is perceived when the thing possessed of flavour, being itself moist or moistened, is touched by the tongue.

a 7. δυνάμει τοιούτου, i.e. ξηρόν, in accordance with the principle that the sense is potentially what the sensible object is actually: cf. 418 a 3 sqq.

## CHAPTER X.

**422 a 8—33.** The object of taste is a species of tangible, taste being a variety of touch. Hence the object of taste, as of touch, is not perceived through any foreign medium. Flavour, the object of taste, is conveyed in the liquid as its vehicle, and liquid is something tangible [§ 1]. If we lived in water, the water which is the vehicle of flavour would still not be a medium to tell us of sweetness in it: herein lies a marked contrast to our perception of colour. In taste there is nothing corresponding to the medium of sight. But the substance in which it resides must be dissolved before flavour can act upon the sense [§ 2]. On the analogy of the other senses, objects of taste must be understood to include that which can hardly be tasted at all and that which has a bad, i.e. pernicious or destructive flavour [§ 3].

**422 a 9.** διὰ τοῦ μεταξὺ ἄλλοτρίου ὄντος σώματος, that is, a medium consisting of a body foreign to the percipient. The common characteristic of touch and taste is that they have no extrinsic medium. But from c. 11 we learn that "flesh" is the medium, though not an external medium, of touch and taste. For the relation of taste to touch and of flavour to tangible cf. 421 a 18 sq., 414 b 11.

**a 10.** οὐδὲ γὰρ ἡ ἀφ' ἧς, int. διὰ τοῦ μεταξὺ ἄλλοτρίου ὄντος σώματος ἔστω or γίνεται.

**a 10.** καὶ τὸ σῶμα δὲ ἐν ᾧ ὁ χυμός, τὸ γευστόν, ἐν ὑγρῷ ὡς ὕλη. A. here enunciates his own view of τὸ γευστόν (somewhat inaccurately, as we shall presently see). From *De Sensu*, c. 4 we learn that this is one of three alternative views there under examination. The other two are (1) that of Empedocles that water contains in itself the various flavours, imperceptible by reason of their minuteness, and (2) that there is in water a matter which is a sort of universal reservoir of flavour germs. These two theories, there refuted (441 a 3—20), are here left unnoticed.

The inaccuracy above mentioned lies in ἐν ὑγρῷ ὡς ὕλη. It is quite clear both from the rest of this chapter and from the parallel discussion in *De Sensu*, c. 4 that it is flavour, the proper object of taste, which is *in* liquid, as matter, i.e. which has liquid for its matter. In the *De Sensu* 441 b 19 flavour (χυμός) is defined as τὸ γιγνόμενον ὑπὸ τοῦ εἰρημένου ξηροῦ πάθος ἐν τῷ ὑγρῷ τῆς γεύσεως τῆς κατὰ δύναμιν ἀλλοιωτικῆς εἰς ἐνέργειαν, "the quality arising in that which is moist through the action of the aforesaid dry, such quality having the capacity of converting potential taste into actual." Flavour is thus clearly a quality or property in the liquid (ἐν τῷ ὑγρῷ), constituting it "of a certain quality" (ποιόν τι), namely "flavoured." So Them. says ποιότης γὰρ ὑγροῦ ὁ χυμός (70, 33 H., 129, 21 Sp.) and Alex. Aphr. *De An.* 54, 5 ὑγρόν δὲ ὁ χυμός, ὅτι ὕλη τῇ ποιότητι ταύτῃ τὸ ὑγρόν ὕδωρ γίνεται. οὐδὲν γὰρ γευστόν ἀνευ ὑγρότητος. τὸ γὰρ ὕδωρ ἀχυμον ὃν καθ' αὐτὸ κτέ. In the text of our present passage, however, it is not as it should be, the flavour, but the body possessing the flavour which is said to be "in liquid" as its matter (i.e. to have liquid for its matter). This is an inaccuracy of phrase. Philop. in his interpretation has given what A. ought to have said and probably meant to say: (398, 33) τὸ γὰρ σῶμα ἐν ᾧ ὡς ἐν ὕλῃ τὸ εἶναι ἔχει ὁ χυμός, ὅσπερ ἔστί γευστόν, ὑγρόν ἔστιν: "for the body in which, as in its matter, flavour, which is the proper object of taste, has its being, is moist." No doubt solid bodies have flavour, but they are not gustable without a liquid

vehicle, in the last resort, the saliva. If the gustable is a liquid, then its particles mix with and flavour water, which, in itself, is flavourless. Flavoured bodies, if solid, are dissolved in, if liquid, are mixed in, the flavourless liquid, water. Sometimes colour, sound etc. are said to be αἰσθητά, sometimes the bodies possessing these qualities. Our text presents the case for taste in analogy with the latter mode of statement. Cf. 424 a 22 ἡ αἴσθησις ἐκάστου ὑπὸ τοῦ ἔχοντος χρώμα ἢ χυμὸν ἢ ψόφον πάσχει: cf. *note* on 419 b 6. This would suggest that with the words τὸ σῶμα τὸ γευστὸν in our present text should be understood the qualification ἢ γευστόν. In *Metaφh.* 1016 a 22 after οἱ χυμοὶ πάντες λέγονται ἔν, A. proceeds οἶον ἔλαιον οἶνος καὶ τὰ τηκτά, thus giving the bodies as instances of the flavours. This is a complete departure from the position taken up in II., c. 6.

a 10. καὶ...δὲ="and again." The medium through which our perception takes place is a part of our body: and again, the moisture, which is the vehicle and, in a sense, the medium of flavour, is not such in the sense in which water or air is the medium of odour. The difference is plain if we imagine how things would be were water the element in which we lived. Then we should perceive both odour and flavour by means of water, but not in the same way: the latter would be perceived by the mixing of the body which has flavour with the water. Water would then be a true medium for odour, but only a vehicle for flavour. Cf. *De Sensu* 6, 447 a 6 ἦν δ' ἂν καὶ τὸ γεύεσθαι ὥσπερ ἡ ὁσμή, εἰ ἐν ὑγρῷ ἦμεν καὶ πορρωτέρω πρὶν θιγείν αὐτοῦ ἡσθανόμεθα. ἐν φ...11 ἐν ὑγρῷ. The preposition is differently used in these two cases. Flavour is an attribute of the thing tasted and, as such, resides in, or is predicable of, its subject. This might have been expressed thus: κατὰ τοῦ γευστοῦ σώματος ὁ χυμὸς κατηγορεῖται. But (according to A.) what is tasted is always something liquid or liquefied. Thus flavour is the form, liquid the matter, the two being inseparably united. Cf. 414 a 25—27.

a 11. ὡς ὕλη. Before a word in apposition and governed by a preposition Greek writers usually omit both the preposition (as here) and the article where there is one. Cf. *Phys.* IV. 12, 221 a 17 τὰ δὲ πράγματα ὡς ἐν ἀριθμῷ τῷ χρόνῳ ἐστίν, i.e. ἐν τῷ χρόνῳ ὡς ἐν ἀριθμῷ, *Metaφh.* 986 b 15 γεννώσιν ὡς ἐξ ὕλης τοῦ ἐνός, 1037 b 3 τῷ ἄλλο ἐν ἄλλῳ εἶναι καὶ ὑποκειμένῳ ὡς ὕλη. A. does not invariably observe the rule. See *Metaφh.* 1035 b 21 διαμερίζεται εἰς ταῦτα ὡς εἰς ὕλην, compared with 1035 b 12 εἰς ἃ διαμερίζεται ὡς ὕλην: also *Metaφh.* 1073 a 19 sq. περὶ τῶν ἀριθμῶν...ὡς περὶ ἀπείρων. Somewhat similar is the suppression of ὡς before τέτταρσιν in *Metaφh.* 985 a 33 οὐ μὴν χρῆται γε τέτταρσιν, ἀλλ' ὡς δυσὶν οὐσι μόνους. τοῦτο δ', int. τὸ ὑγρόν. It is true that τὸ σῶμα ἐν φ ὁ χυμὸς is also ἀπτόν, but it may be dissolved in the liquid. Cf. 423 a 24 τὸ δ' ὑγρόν οὐκ ἔστιν ἀνευ σώματος.

a 11 διὸ καὶ εἰ...12 τοῦ γλυκέος. The original reading of E is open to some doubt. It now presents εἰμεν...αἰσθανοίμεθ', but εἰμεν is over an erasure, so that probably ἦμεν was first written. Of the combination, an unreal condition in the indicative (εἰ...ἦμεν) followed by a potential optative (αἰσθανοίμεθ'), Goodwin (*M. and T.*, p. 190, § 504 b) says that it seldom occurs and is not a strictly logical combination: cf. Dem. *De Cor.* XVIII. § 206 εἰ τοῦτ' ἐπεχείρουν λέγειν, οὐκ ἔσθ' ὅστις οὐκ ἂν εἰκότως ἐπιτιμήσειέ μοι. The ἂν contained in καὶ anticipates the ἂν of the apodosis, but καὶ εἰ often go together in A. (possibly to avoid hiatus) when no apodosis follows with which ἂν can be construed, e.g. 432 a 21: see Eucken, *De Particularum usu*, p. 61.

a 13. τῷ μαχθῆναι. Cf. *De Sensu* 4, 441 a 3 sqq. Water in itself is flavourless (ἡ τοῦ ὕδατος φύσις βούλεται ἄχυμος εἶναι). What flavours it acquires are

therefore due to admixture with it of flavoured particles and the influence of heat.

a 14. καθάπερ ἐπὶ τοῦ ποτοῦ, "as in the case of what we drink," without the aid of an external medium. We have direct and immediate perception of the flavour of a beverage.

a 14. τὸ δὲ χρῶμα. A note is here added to contrast with this direct perception of flavour the case of sight, where the object, colour, is farthest removed from the percipient and the necessity of a medium is most undeniable. Cf. 418 b 15, where it is denied that light is an emanation, ἀπορροή. Them., in his paraphrase, remarks that, though we taste the beverages in a liquid vehicle, the liquid is not the medium, and though it has received the flavour of the beverage, it has not received it in the same way as the transparent medium receives colours: (70, 29 H., 129, 15 Sp.) αὐτοῦ (int. τοῦ ὑγροῦ) δεξαμένου τὸν χυμόν, δεξαμένου δὲ οὐχ ὡς τὸ διαφανὲς τὰ χρώματα. He then proceeds: the colours are not seen because they are mixed with the air or because there is any emanation from them which is mingled with the transparent medium (70, 30 H., 129, 17 Sp.) οὐ γὰρ οὕτως ὁράται τὰ χρώματα τῷ ἀναμίγνυσθαι πρὸς τὸν ἀέρα ἢ ἀπορρεῖν τὶ αὐτῶν καὶ ἀνακίρνασθαι πρὸς τὸ διαφανές, flavour being in fact a determining quality of liquid, ποιότης γὰρ ὑγροῦ ὁ χυμός, ἀλλ' οὐχ ἡ ὑγρόν. To the same effect Philop. 400, 12 οὐχ οὕτως δὲ τὰ χρώματα ὁρῶμεν δι' ἀέρος ἢ δι' ὕδατος· οὐ γὰρ ἐμίγνυνται τὰ χρώματα τῷ διαφανεί. οὐδὲ γὰρ ὅλη αὐτῶν γίνεται τὸ διαφανές, ὡς τῶν χυμῶν τὸ ὑγρόν, οὐδὲ κεχρωσμένον τὸ διαφανὲς τῇ ὕψει ὑποπίπτει, ἀλλὰ δι' αὐτοῦ τὰ χρώματα ὁράται.

a 15. τῷ μίγνυσθαι. That is to say by being mixed with the air (Them.). ὡς μὲν οὖν, i.e. ὡς τὸ μεταξὺ ἐπὶ τῆς ὕψεως, οὐθὲν ἐστὶν ἐπὶ τῆς γεύσεως. The parallel with sight (says A.) must be left incomplete: in the case of taste there is no medium, i.e. no external medium, as there was in the case of sight.

a 17. οὐθὲν...ἄνευ ὑγρότητος. No gustable object produces an actual sensation without moisture. As to ποιεῖ αἴσθησιν see note on 419 a 26. It is in virtue of moisture, ὑγρότης, that A. can say *Μεταφρ.* 1016 a 22 οἱ χυμοὶ πάντες λέγονται ἓν, οἷον ἔλαιον οἶνος καὶ τὰ τηκτά, ὅτι πάντων τὸ ἔσχατον ὑποκείμενον τὸ αὐτό· ὕδωρ γὰρ ἢ ἀήρ πάντα ταῦτ' ἐστίν.

a 19. εὐτηκτόν τε γὰρ...γλώττης. Cf. Them. 70, 37 H., 129, 27, Sp. οἱ γὰρ ἅλεις δυνάμει ὑγροί· ἅμα γὰρ τῷ πελάσαι τῇ γλώττῃ συντήκονται καὶ ἐξυγραινουσι τὴν γλῶτταν. See note on 422 a 6.

a 20. τοῦ τε ὁρατοῦ καὶ τοῦ ἀπορότου. Cf. 418 b 28 sqq., 421 b 3 sqq. The treatment of this topic here is much fuller than elsewhere.

a 22. λίαν λαμπροῦ. This recalls Milton's phrases "dark with excessive bright" and "brightness had made invisible" and Gray's imitation "blasted with excess of light." It is anticipated by Plato, *Rep.* 516 A, where those who have escaped from the cave are dazzled by too much light as well as blinded by the darkness of the cave when they return to it. τοῦ σκοτός, genitive of comparison=ἡ τὸ σκοτός [ἀδρατόν ἐστιν]. Cf. *Eth. Nic.* 1131 b 27.

a 25. ὥσπερ γὰρ. Either there is too little which is characteristic of the object, or too much. If there is too much, the organ is incapable of acting; see 424 a 29 αἱ ὑπερβολαὶ φθείρουσι τὰ αἰσθητήρια: excellens sensibile corrumpit sensum. Both the defect and the excess in the object produce insensibility in the sense.

a 26 ἀδρατόν...28 ἐξη. Here λέγεται seems misplaced. The more natural order, to judge from the many parallels in *Μεταφρ.* Δ, is ἀδρατόν λέγεται τὸ μὲν δλωσ,...τὸ δ' ἐὰν κτέ. See last note on 412 a 8.

a 27. τὸ ἀδύνατον. If to any verbal in -τος the negative α- be prefixed the result will be an adjective implying impossibility. Here τὸ ἀδύνατον is a general term for ἀόρατον, ἀνήκουστον, ἄγευστον, ἀπρακτον κτέ., what cannot be seen, heard, tasted, done etc., as the case may be: in short, with reference to sensibles, ἀδύνατον ποιεῖν αἰσθησιν.

a 28. ἐὰν πεφυκὸς μὴ ἔχη, i.e. ἐὰν πεφυκὸς ἔχειν (ὅτιδῆποτε οἶον πόδας ἢ πυρῆνα...) μὴ ἔχη. The subject is quite general and therefore the participle is neuter singular. Thus τὸ ἄπουν=τοῦτο δὲ πόδας ἔχειν πεφυκὸς μὴ ἔχη πόδας, and τὸ τυφλὸν=τοῦτο δὲ ὁρᾶν πεφυκὸς ὄψιν μὴ ἔχη. Compare the account of στέρησις in *Μεταφρ.* 1022 b 22 στέρησις λέγεται ἓνα μὲν τρόπον ἐὰν μὴ ἔχη τι τῶν πεφυκῶν ἔχεισθαι, κἂν μὴ αὐτὸ ἢ πεφυκὸς ἔχειν, οἶον φυτὸν ὀμμάτων ἐστερηθῆναι λέγεται (one meaning of στέρησις is when a thing is without something naturally possessed, though it is not its own nature to possess it; e.g. a plant is said to be without eyes). ἓνα δ' ἐὰν πεφυκὸς ἔχειν, ἢ αὐτὸ ἢ τὸ γένος, μὴ ἔχη, οἶον ἄλλως ἀνθρώπος δὲ τυφλὸς ὄψεως ἐστερηται καὶ ἀσπλάξ. Thus in the present case sound and smell are ἀόρατα. But we are concerned with such objects as might be the objects of sense and are not, owing either to excess or defect. Cf. *Simpl.* 156, 13—24.

a 30. τοῦτο δὲ, int. τὸ ἄγευστον.

a 31. φθαρτικὸν τῆς γεύσεως, as we should say, "injurious to the palate." The organ may not be actually destroyed, but, *quā* organ of taste, it is crippled and rendered useless. When it can no longer subserve its function, it is no longer a sense-organ (except equivocally: a tongue which cannot taste, an eye which cannot see, a withered hand). Cf. 416 a 5, 412 b 20 sq. ἀρχή, int. τῶν χυμῶν or τῶν γευστῶν. In enumerating flavours or gustables we begin with the pair "drinkable and undrinkable." With this primary sense of ἀρχή, starting-point, beginning, cf. e.g. 403 b 24, 413 a 20 and the use of *πρώτος* *Μεταφρ.* 1046 a 10 πρὸς πρώτην μίαν [int. δύναμιν] λέγονται [int. δυνάμεις].

a 32. γεῦσις γάρ τις ἀμφοτέρα, "for both are a sort of taste." This must mean flavour, χυμός, rather than τὸ ἔχον χυμόν. A. uses the abstract term (in the singular) for the concrete plural γευστά, as ὄψις for spectacle, thing seen: so also ἀφή for its object, tangible *De Sensu* 3, 439 a 8, 11 (see Alex. Aphr. *ad loc.* 41, 21 W). Compare our own double use of the words taste and smell. τὸ μὲν, int. τὸ ἄπουν.

a 33. φθαρτικὴ τῆς γεύσεως. Considering that the feminine adjective forcibly suggests γεῦσις, it is strange to find τῆς γεύσεως as a genitive dependent on it. The γεῦσις which is φαύλη is the object of taste, in other words, χυμός, while τῆς γεύσεως which is governed by φθαρτικὴ is the organ of taste as such, in other words, the tongue. Injury to the organ implies that the faculty is impaired, so that it makes very little difference whether γεῦσις here be rendered "tongue" or "faculty of tasting," and the same uncertainty attaches to γεῦσις, ὄψις, ὁσφρησις in 426 b 1 sq. τὸ δὲ, int. τὸ ποτόν. κατὰ φύσιν, int. ἐστίν, "is natural." κοινὸν ἀφῆς καὶ γεύσεως. *Quā* ὑγρόν, it is tangible, an object of touch; *quā* ἔχχυμον, it is gustable, an object of taste.

422 a 33—b 16. The organ of taste needs to be, not actually liquid, for that is what its object is, but capable of liquefaction. Thus the tongue, if too moist or too dry, cannot taste [§ 4]. The species of flavour are various, like those of colour. The primary contrast is between sweet and bitter, answering to white and black in colour. Next come unctuous (succulent) and brackish. Intermediate (between the last pair) come the pungent, the harsh, the astringent and the acid. Potentially the faculty of taste is each of these in turn: it is the object of taste which makes them so actually [§ 5].

422 b 1. ἀνάγκη. On the principle that the sense-organ must be *δυνάμει* what the sense-object is *ἐνεργεία*. Cf. 418 a 3 sq., 422 a 7.

b 4. τὸ δυνάμενον μὲν ὑγραίνεσθαι σωζόμενον, μὴ ὑγρὸν δέ, "that which is capable of becoming moist without losing its nature [i.e. its distinctive character as organ of taste], but is not really moist." That the organ of sense must be moistened we have already heard. What is new is that it must be capable while moistened of retaining its own character. The article covers the whole group of words in the lemma. One might be tempted to suggest *τι* for *τό*, but the fact is that the article can be used in this odd fashion, which it is difficult to formulate precisely. The participle *σωζόμενον* has the qualifying effect of an adverb with *ὑγραίνεσθαι*. Miss Alford has favoured me with the following suggestion: "May this be a development from the use of the article with the future participle, e.g. in Plato, *Rep.* 342 A *δεῖ τινὸς τέχνης τῆς τὸ ξυμφέρων εἰς ταῦτα σκεψομένης*? Compare the change of tense, without obvious change of meaning, in *Pol.* 1272 a 41 *πόρρω γ' ἀποικοῦσιν ἐν νήσῳ τῶν διαφθερούντων* and 1308 a 24 sq. *σώζονται δ' αἱ πολιτεῖαι οὐ μόνον διὰ τὸ πόρρω εἶναι τῶν διαφθειρόντων, ἀλλ' ἐνίοτε καὶ διὰ τὸ ἐγγύς*."

b 6. αὐτή. This represents *τοῦτο* attracted to the gender of the complement *ἀφῆ*, and the "this" stands for the attempted contact of the unduly moist tongue with the object.

b 7. τοῦ πρώτου ὑγροῦ, "the original moisture," i.e. the tongue retains the taste of the first fluid with which it has come in contact, namely the saliva. The tongue in this case tastes its own moisture, and thus is prevented from tasting anything afterwards brought in contact with it.

b 9. τοιαύτης, int. *πικρᾶς*.

b 11. ἀπλά. Cf. *De Sensu* 4, 442 a 12: "again, just as the colours result from the mixture of white and black, so the flavours result from the mixture of sweet and bitter. And these flavours depend on the quantitative relation between the components mixed."

b 12. τοῦ μέν, int. *τοῦ γλυκέος*. τοῦ δέ, int. *τοῦ πικροῦ*.

b 13. μεταξὺ δὲ τούτων. Evidently the four flavours next mentioned are meant to be intermediate between the single pair which may be designated either "unctuous" and "saline," or, if we like, "succulent" and "briny": and these four are not arranged in pairs.

b 14. σχεδόν, "approximately," Latin *ferè*. Cf. 403 b 28 *σχεδὸν δύο ταῦτα*.

b 15. ὥστε τὸ γευστικόν κτέ. Cf. 418 a 3 sq.

## CHAPTER XI.

**422 b 17—423 a 21.** With regard to touch, two questions arise. (1) Is touch a single sense, or does it include several senses? In the latter case, the objects of touch will be various. (2) Is the sense-organ the flesh, or something internal? [§ 1]. A single sense, it might be thought, relates to a single pair of opposite qualities. Touch, however, relates to several such pairs, hot and cold, dry and moist, hard and soft, etc. Now it might be urged that this is also the case with other senses, e.g. with hearing, which distinguishes loudness and timbre as well as pitch. This is true; but then the audible qualities have a common substratum, sound. What common substratum is there for tangible qualities? [§ 2]. Next, as regards the sense-organ, the fact



that the sensation occurs simultaneously with contact is not convincing evidence. For suppose the flesh encased in a thin membrane, objects of touch would be, as before, directly felt [§ 3]; still more if this membrane became a part of the body [in fact, its flesh]. Such a medium of touch may be compared to an envelope of air surrounding the body on all sides and enabling us to have direct perception of colours, sounds, and odours: whereby seeing, hearing and smelling would apparently be reduced to a single sense. An animate body could not be constructed merely of air or water: it needs earth as well, as it must be solid; and such a compound is just what flesh is. Hence the body must be a medium [and not an organ] of touch, a medium which is part of us, and which serves more than one sense [§ 4]: as is shown by the case of the tongue. For the tongue has touch as well as taste: now if the rest of our flesh had been able to taste as well as to touch, we should have thought that the two senses, taste and touch, were one and the same [§ 5].

422 b 17. *ὁ αὐτὸς λόγος*, "the same account is to be given." On coming to touch, the last of the five senses, Aristotle remarks that the relation between this sense and the sensible object is the same as in the case of the former four. In Professor Beare's words (p. 189), "the sense of touching, like the other senses, is best explained if its object be first analysed and examined." Cf. 415 a 16—22. Philop., however, has a different explanation, to the effect that the same account must be given of touch as of tangible objects, namely that if touch is a single sense, then there is only one sort of tangible, while if touch includes several senses, there will be several sorts of tangible (Philop. 422, 11—21).

b 17. *εἰ γὰρ ἡ ἀφή*. Two questions are propounded. (1) Is touch a single sense or a coalition of separate senses? (2) Is flesh an organ or a medium through which an internal sense works? A. considers (1) as far as 422 b 33 *ἐνδηλον*. Each sense appears to have a pair of contraries with which it deals. Touch, however, deals with a number of contraries. Yet closer examination shows that it is only a superficial view which makes each of the other senses concerned with a single pair of contraries. Still, A. notes that there is no single correlative object of touch corresponding to sound, which is correlative of hearing. Here the first question is allowed to drop.

b 20. *τὸ τοῦ ἀπτικού*, "the organ of the faculty of touch." There seems no ground for departing from this well-attested reading, although Bekker's conjecture *τὸ τοῦ ἀπτοῦ ἀπτικόν* has been followed by Trendelenburg, Torstrik and Wallace.

b 21. *καὶ ἐν τοῖς ἄλλοις τὸ ἀνάλογον*. Cf. *Hist. An.* III. 16, 519 b 26 *σὰρξ δὲ καὶ τὸ παραπλησίαν ἔχον τὴν φύσιν τῇ σαρκὶ ἐν τοῖς ἐναιμίς* πᾶσιν ἐστι μεταξὺ τοῦ δέρματος καὶ τοῦ ὁστοῦ καὶ τῶν ἀνάλογον τοῖς ὁστοῖς, *De Part. An.* I. 5, 645 b 8 καὶ τοῖς μὲν αἷμα, τοῖς δὲ τὸ ἀνάλογον τὴν αὐτὴν ἔχον δύναμιν ἥπερ τοῖς ἐναιμίς τὸ αἷμα. Cf. 421 a 17, 28. Dr Ogle, *Parts of Animals* (pp. 196, 203), takes red muscular tissue to be what A. understood by *σὰρξ*. Flesh is discussed *De Part. An.* II., c. 8, where it is described 653 b 21 as *ἀρχὴ καὶ σῶμα καθ' αὐτὸ τῶν ζώων*. After showing on teleological grounds the necessity for this b 22—30 he shows in detail b 30 sqq. from the facts of experience (*κατὰ τὴν αἰσθησιν*) that all other parts of the structure of all animals are subservient to the protection or maintenance of flesh or its analogue.

b 22. *τὸ δὲ πρῶτον αἰσθητήριον*, "the primary sense-organ," that is as contrasted with flesh, regarded on this hypothesis as a medium, although as part of the body it has apparently a superficial claim to be called a sense-organ. In the *Ind. Ar.* (653 b 25) Bonitz distinguishes this use of the word from the more common absolute use in which it is almost equivalent to *καθ' αὐτό* ("πρῶτος ubi

absolute usurpatur conferri potest cum notione et vario usu nominis ἀρχή" 652 b 35) and thus defines it: "πρώτον relatum ad aliud id dicitur, quod alteri ita est proximum, ut nihil intercedat medium. potest haec relatio significari, πρῶτον πρὸς τὸ καθόλου, πρὸς τὸ καθ' ἑκάστον *Anal. Post.* II. 18, 99 b 9, plerumque non significatur sed ex contextu sententiarum intellegitur." According to Bonitz, when A. calls the internal organ of touch "primary" he means that it is in direct and immediate communication with the tangible object, in spite of the interposition of flesh. The phrase or an equivalent recurs 423 b 30 sq., 424 a 24, 425 b 19, and the internal organ is called ἔσχατον 426 b 16.

b 23. ἐντός. The position of the sense-organs is discussed *De Part. An.* II. 10, their position in man more particularly 656 a 13—657 a 11. The following are the most important positive statements: 656 a 27 ὅτι μὲν οὖν ἀρχὴ τῶν αἰσθήσεων ἐστὶν ὁ περὶ τὴν καρδίαν τόπος, διῶρισται πρότερον ἐν τοῖς περὶ αἰσθήσεως· καὶ διότι αἱ μὲν δύο φανερώς ἡρτημέναι πρὸς τὴν καρδίαν εἰσὶν, ἥ τε τῶν ἀπτῶν καὶ ἡ τῶν χυμῶν, b 24 τὴν δ' αἰσθησιν ἀπὸ τῆς καρδίας [int. ἔχει τὰ ἔχοντα τὸν ἐγκέφαλον], b 34 ἐπὶ μὲν οὖν τῆς ἀφῆς...οὐκ ἔστι τὸ πρῶτον αἰσθητήριον ἢ σάρξ καὶ τὸ τοιοῦτο μόριον, ἀλλ' ἐντός. Equally emphatic is the statement of positive doctrine in *De Iuv.* 3, 469 a 4—27. πᾶσά τε γὰρ αἰσθησις. This τε is taken up by δὲ b 25, ἐν δὲ τῷ ἀπτό: cf. *Ind. Ar.* 749 b 40 sq.

b 23. μιᾷς ἐναντιώσεως, a single contrariety, i.e. a single pair of contraries or opposite qualities. We have already seen that sight is related to light and dark, sound to loud and faint, smell to odorous and inodorous, taste to γευστὸν and ἀγευστον. But A. expands his doctrine (see 426 b 8—12), which is most clearly set forth *De Sensu* 6, 445 b 24 πᾶν δὲ τὸ αἰσθητὸν ἔχει ἐναντιώσιν, οἷον ἐν χρώματι τὸ λευκὸν καὶ τὸ μέλαν, ἐν χυμῷ γλυκὺ καὶ πικρὸν· καὶ ἐν τοῖς ἄλλοις δὴ πᾶσιν ἐστὶν ἔσχατα τὰ ἐναντία. τὸ μὲν οὖν συνεχὲς εἰς ἀπειρα τέμνεται ἀνισα, εἰς δ' ἴσα πεπερασμένα· τὸ δὲ μὴ καθ' αὐτὸ συνεχὲς εἰς πεπερασμένα εἶδη. The last sentence is introduced to show why the different species or kinds of quality which form the proper object of each special sense are finite in number, (445 b 21) διὰ τί πεπεράνται τὰ εἶδη καὶ χρώματος καὶ χυμοῦ καὶ φθόγγων καὶ τῶν ἄλλων αἰσθητῶν. The province of each sense is continuous, *ib.* b 29 sq. ὑπάρχει δὲ συνέχεια αἰ ἐν τούτοις, and the opposite qualities form the extremities, ἔσχατα, of this continuum. Hence A. applies his general proposition, *ib.* b 23, ὃν μὲν γὰρ ἐστὶν ἔσχατα, ἀναγκαῖον πεπεράνθαι τὰ ἐντός. Each special sense has its own province (colour, sound, smell, flavour); in this it pronounces judgment on sensible qualities which run from one to the other extreme by imperceptible gradations. Thus sight discerns the positive quality white at one end of the scale, the negative quality black at the other, and the various shades of colour intermediate. Hearing discerns the shrillest of high notes at one end of the scale, the deepest of low notes at the other and all the varying degrees of pitch intermediate. All the qualities cognised by a single special sense, even the contrary extremes (white, black, sweet, bitter etc.), are species (τὰ μὲν πάθη ὡς εἶδη λεκτέον *De Sensu* 6, 445 b 29) homogeneous with each other, ὁμογενῆ, and heterogeneous with those cognised by any other sense: 431 a 24, *De Sensu* 7, 447 b 24—448 a 18. Cf. also note on 418 a 14 *σῆμα*.

b 24. λευκοῦ καὶ μέλανος. This may be inferred from 418 b 18 φῶς ἐναντίον σκότει, 418 b 28, 29, but it is singular that it has not been explicitly stated hitherto in this treatise, as it is in *De Sensu* 3, 439 b 16 ὥσπερ οὖν ἐκεῖ τὸ μὲν φῶς τὸ δὲ σκότος, οὕτως ἐν τοῖς σώμασιν ἐγγίγνεται τὸ λευκὸν καὶ τὸ μέλαν, where A. attempts to show that the seven species of colour can all be derived from white and black blended in different proportions or one seen through another. Cf. *ib.* 4, 442 a 12, 20. ὀξέος καὶ βαρέος. Cf. 420 a 29.

b 25. *πικροῦ καὶ γλυκέος*. Cf. 422 b 11, 421 a 27. *ἐν δὲ τῷ ἀπτῷ πολλὰ*. Cf. *De Part. An.* II. 1, 647 a 16 *μάλιστα γὰρ αὕτη* [int. ἡ ἀφή] *δοκεῖ πλείονων εἶναι γενῶν*, καὶ πολλὰς ἔχειν ἐναντιώσεις τὸ ὑπὸ ταύτην αἰσθητόν [i.e. τὸ ἀπτόν], *θερμὸν ψυχρόν, ξηρὸν ὑγρὸν καὶ εἴ τι ἄλλο τοιοῦτον*. The variety may be reduced to two main heads (1) resistance, (2) temperature.

b 26. *θερμὸν ψυχρόν*. Compare the list in *De Gen. et Corr.* II. 2, 329 b 18, where are added *βαρὺ κοῦφον, γλίσχρον κραῦρον, τραχὺ λείον, παχὺ λεπτόν*.

b 27. *ἔχει δὲ τινα λύσιν*. With *λύσιν* as with b 19 *ἀπορίαν* the verb *ἔχει* is impersonal: the German idiom "es giebt Etwas" is a parallel. The clause with *ὅτι* contains the partial solution of the difficulty. A. means that a sort of answer may be given by saying that each of the other special senses has likewise to deal with more than one pair of opposites. Not a satisfactory answer: cf. b 32, *ἀλλά*. Them. remarks (72, 21 H., 132, 20 Sp.) *τοῦτο μὲν οὖν ἴσως ἂν τις οὐκ ἀποχρώντως μὲν ἀλλὰ πιθανῶς διαλύσει, ὅτι...ἀλλ' οὐχ ἱκανή...ἡ παραμυθία· μέγεθος μὲν γὰρ καὶ σμικρότης κοινὰ πασῶν ἐστὶ τῶν αἰσθήσεων καὶ τοῦ καθ' ἑαυτὴν ἐκάστη μεγάλου καὶ μικροῦ αἰσθάνεται, λειότης δὲ καὶ τραχύτης ἦτοι λέγονται ἐκ μεταφορὰς τῶν ἀπτόν, ἡ τοῦ σχήματος καὶ αὐται ἂν εἶεν, εἴπερ καὶ φωνῆς σχῆμα θετέον διὰ τὸν πληττόμενον ὑπ' αὐτῆς ἀέρα· τὸ δὲ σχῆμα κοινὸν ἦν καὶ αὐτὸ αἰσθητόν*. Thus Them. regards the varieties perceived by sight and hearing as *κοινὰ*, not *ἴδια*. For the expression cf. *Pol.* 1281 a 41 *δόξειεν ἂν λύσθαι καὶ τιν' ἔχειν ἀπορίαν, τάχα δὲ κἂν ἀλήθειαν*, *Metaφh.* 995 a 28 *ἡ γὰρ ὑστερον εὐπορία λύσις τῶν πρότερον ἀπορουμένων ἐστὶ*, *De Caelo* II. 12, 291 b 26 *εἴ τις διὰ τὸ φιλοσοφίας διψῇ καὶ μικρὰς εὐπορίας ἀγαπᾷ περὶ ὧν τὰς μεγίστας ἔχουεν ἀπορίας*.

b 29. *οὐ μόνον δξύτης...31 τραχύτης*. The same three pairs of opposite qualities are recognised by Plato, *Tim.* 67 B, c.

b 32. *τὸ ἐν τὸ ὑποκείμενον*. In each of the other senses, the various qualities perceived can be reduced to a single genus. There seems however to be no one common genus to which the tangible qualities just enumerated can be subordinated. Philop. (423, 30—32) raises a doubt even as regards sight, whether phosphorescence can be brought under the same genus as colour. There is no great difference between *ὑποκείμενον τῇ ἀφῇ* and *τὰ ἀντικείμενα* in 402 b 15 and 415 a 20. Cf. 426 b 10 *τὰς τοῦ ὑποκειμένου αἰσθητοῦ διαφορὰς* and *note*.

b 34. *πότερον...ἢ οὐ*. This is the second main question; but its discussion serves also to elucidate the first. We shall here anticipate A.'s decision, which is that flesh is for touch the medium and not the organ of sense. Cf. *De Part. An.* II. 10, 656 b 34 as cited in *note* on 422 b 23, *ἐντός*. In subsequent passages of *De A.* Aristotle continues to speak of flesh as the organ of touch and, though this may be sometimes an accommodation to popular language and ideas, yet on the whole the conclusion of this chapter that flesh is an intra-organic medium is not incompatible with the view that flesh is in some sense also the organ of touch. The internal organ here postulated, *τὸ ἐντός* (cf. 423 b 23), in contradistinction to the surface of the body, may itself be composed of flesh. Furthermore, the hypothesis of organ and medium combined in one is distinctly formulated *De Part. An.* II. 8, 653 b 24 *ταύτης δ' [int. τῆς ἀφῆς] αἰσθητήριον τὸ τοιοῦτο μόριόν ἐστιν, ἥτοι τὸ πρῶτον, ὥσπερ ἡ κόρη τῆς ὄψεως, ἡ τὸ δι' οὗ συνελημμένον, ὥσπερ ἂν εἴ τις προσλάβοι τῇ κόρῃ τὸ διαφανὲς πᾶν* [all the external diaphanous medium]. *ἐπὶ μὲν οὖν τῶν ἄλλων αἰσθήσεων ἀδύνατόν τε καὶ οὐδὲν προὔργου τοῦτ' ἦν ποιῆσαι τῇ φύσει, τὸ δ' ἀπτικὸν ἐξ ἀνάγκης· μόνον γὰρ ἡ μάλιστα τοῦτ' ἐστὶ σωματικῶς τῶν αἰσθητηρίων.* *εὐθέως*, directly, without any intermediary. Cf. 421 b 31.

423 a 2. *ἅμα θγγανομένον*, int. *τῶν αἰσθητῶν*: genitive absolute, "simultaneously with the things being touched." καὶ γὰρ νῦν. In order to establish

his point that the instantaneousness of the sensation of touch by no means proves the absence of a medium, Aristotle introduces two ingenious suppositions. The first is: suppose we were to make and stretch over our flesh an artificial skin or tissue. Such a glove on the hand (Them. calls it a gauze-like web *λεπτὴν ὀθόνην*) does not impair the instantaneousness of touch, as may be verified by experiment (*καὶ...νῦν*). Now imagine (a 5 *εἰ δὲ καὶ κτέ.*) such a glove, or web, to grow on to, and become part of, the body. Perceptions would pass, if possible, still more rapidly. Cf. *De Part. An.* II. 8, 653 b 25 *τὸ δι' οὗ συνειλημμένον, ὥσπερ ἂν εἴ τις προσλάβοι τῇ κόρῃ τὸ διαφανὲς πᾶν*, cited in last note but one.

a 4. *ἀψάμενος*, "the moment it (i.e. the membrane) touches." The meaning may be a little clearer in the paraphrase of Themistius (73, I H., 133, 18 Sp.) *καὶ γὰρ νῦν εἴ τις περὶ τὴν σάρκα περιτείνειεν οἶον ὑμένα ποιήσας ἢ λεπτὴν ὀθόνην, ὅμως εὐθὺς ἀψάμενός* (the moment we touch) *γίνεται ἔνδηλος ἡ θερμότης ἢ ἡ ψυχρότης κτέ.*, and *ἀψάμενός* would be preferable in our text to the proposals *ἀψάμενον* (Torst.) and *ἀψάμενῳ* (Trend.). But no change is needed. *ἐνσημαίνει*, int. *ὁ ὑμῖν*, "intimates," "gives a sign," "communicates." Observe the indicative after the previous optative *περιτείνειεν*. Cf. Thuc. II. 39, 4 *καίτοι εἰ ῥαθυμία μᾶλλον ἢ πόνων μελέτη...ἐθέλοιμεν κινδυνεύειν, περιγίγνεται ἡμῖν κτέ.*, which Dionysius of Halicarnassus criticises *περὶ Θουκ. ἰδιωμ. 12, 1*. Doubtless he would have repeated his criticism in the present passage thus: *ἐνταῦθα γὰρ τὸ μὲν περιτείνει ῥῆμα τοῦ μέλλοντός ἐστι χρόνου δηλωτικόν, τὸ δὲ ἐνσημαίνει τοῦ παρόντος· ἀκόλουθον δ' ἂν ἦν εἰ συνέζευξε τῷ περιτείνει τὸ ἐνσημαίνει*.

a 4. *ἐν τούτῳ*, int. *ἐν τῷ ὑμένι*. The suggestion is that so also flesh, though apparently the sense-organ, may not really be so.

a 5. *συμφυῖς*, "naturally adhering." The two grow together and coalesce throughout, as the tongue with the lower jaw or base of the mouth in the crocodile (*τῇ κάτω σιαγόνι συμφυῖς*, *De Part. An.* II. 17, 660 b 28). Cf. *infra* a 7 *περιεπεφύκει*. This is the primary meaning of *συμφυῖς*. For a more extended application in which the idea of growth is lost and that of direct contact or close connexion is retained see 420 a 4, 12. Thus *Pol.* 1286 a 18 *συμφυῖς* is used to express the connexion between *τὸ παθητικόν* and reason in the human soul.

a 6. *τὸ τοιοῦτο μόριον τοῦ σώματος*. The part of the body which answers to the inseparable membrane of the illustration: of course the flesh is meant.

a 7. *ὥσπερ ἂν εἰ*. From the last supposition, Aristotle now passes on to yet another, which concerns not only the question in hand respecting the sense-organ, but also the previous question whether touch is one sense or more than one. For the web fitted to the skin he substitutes in imagination an envelope of air. If this were attached to us, we should think that we perceived colours, sounds and odours by one and the same organ, namely this enveloping air, and that the three senses, which as a fact we know to be distinct, sight, hearing and smell, were one. The effect of this illustration is to suggest that similarly touch, which appears to be a single sense, may be a plurality of senses. Flesh for touch will be like air for those three senses in the case supposed, an intra-organic medium (*δι' οὗ*) attached to the percipient, *περιεπεφύκει*.

a 8. *ἐνί τινι*, "by means of a single thing," the envelope of air in question. This would be assumed to be the single organ of the three senses then considered as merged in one.

a 10. *διὰ τὸ διαρίσθαι*. The subject to *διαρίσθαι* is the antecedent to *δι' οὗ*, namely that which is in each case the medium, as *τὸ διηχέει* for sound, *τὸ διαφανέει* for sight, *τὸ διοσμὸν* for smell. With *διαρίσθαι* understand *τοῦ σώματος* (in

contrast to προσπεφυκέναι or περιπεφυκέναι). αὶ κινήσεις. A comparison with a 16 αἰσθήσεις shows that the two terms are here identical in meaning. Cf. 417 a 14—18, 420 a 33, 426 a 2 sqq., 426 b 29—427 a 1, 425 b 25 in the light of 428 b 10—429 a 2.

a 11. φανερά...ἕτερα ὄντα, "it is evident that the organs of the three senses mentioned are distinct," i.e. are distinct from each other: quum vero aēr a corpore animantis separatus sit, non latet nos sensus illos esse tres (Torstrik, p. 159). We are able to distinguish between the organs of sight, hearing and smell. This remark carries several consequences. What does A. intend? That flesh, like the supposed envelope of air, is not an organ but a medium, and that an internal organ may work through this medium. Air congenitally united to our bodies, as in the case supposed, would still be a medium and we should not then be able to discriminate between the organs of the three senses. The implication is that it is for a similar reason, because it is united with us, that the flesh is popularly regarded as an organ. How can we be sure it is anything more than an inseparable medium? There is, however, another possible inference, which must not be overlooked. The distinctness of the three sense-organs, as things are, might suggest a totally different conclusion, viz. the unity of sense. What seem to us three distinct senses, seeing, hearing and smelling, may have to be referred hereafter to one internal sense, with its organ in the region of the heart. This is possible, even if less likely at this point in the treatise. But in this chapter A. doubtless has in his mind the conception of *sensus communis*, to be developed in III., cc. 1, 2.

a 12. τοῦτο νῦν ἄδηλον, i.e. whether it is a fact that several distinct senses are confused in an apparently single sense. Cf. Them. (73, 19 H., 134, 14 Sp.) ἐπὶ δὲ τῆς ἀφῆς ἄδηλον εἰ πλείω ἢ ἓν. He proceeds to make A.'s meaning a little more explicit thus: τί γὰρ κωλύει πλείω μὲν εἶναι, τὴν σάρκα δὲ ἅπασιν ἕξωθεν ὁμοίαν οὖσαν ὥσπερ ἔλντρον περιπεπλάσθαι; "Are we any nearer the solution," A. may be supposed to ask, "of our question (b 19, 20) as to whether touch embraces more senses than one?" We might have a number of different organs working through the flesh as medium: but if so, we are unable to distinguish them. From this it follows that we cannot hope to assign the different sorts of touch to different parts of the body.

a 13 λείπεται δὲ μικτόν...14 τούτων εἶναι. It follows that of the composite animal body (1) earth, the solid element, (2) air and water (τούτων), the media of the telepathic senses, must be constituents. The same conclusion is more clearly expressed in 435 a 11 sqq. and the argument by which it is reached more fully stated. The body of the animate creature cannot be ἀπλοῦν, i.e. consisting of one element only. For example, it cannot be of fire (πύρρον), for fire is destructive; it cannot be of air or water, for these are media of the telepathic senses and not suitable for touch; it cannot be of earth only, for by touch we perceive hot and cold, whereas earth would only account for hard and soft. Thus it cannot be ἀπλοῦν, but must be μικτόν.

a 14. βούλεται. See *Ind. Ar.* 140 b 41 saepe per βούλεται εἶναι significatur quo quid per naturam suam tendit, sive id assequitur quo tendit, sive non plene et perfecte assequitur. Cf. *Poet.* 1261 b 12, 1295 b 25, 1289 a 32 βούλεται γὰρ ἑκατέρα κατ' ἀρετὴν συνεστάναι κεχορηγημένην, 1254 b 27, 1255 b 3. Until an example of βούλεσθαι in this sense without an infinitive following has been adduced, I am content to follow Torstrik and Biehl in inserting εἶναι in the text. The question at issue is not whether A. frequently omitted the copula, εἶναι, as readily as ἐστίν and εἰσίν. No one who has read Vahlen's note on *Poet.* 1459 b 7 will have any doubt that A. dispensed as easily with the copula as any of the Latin writers, and would have been content to take such a sentence as "fusi

hostes" for normal (Roby, *Latin Grammar* II., xxii.). The brevity of his shorthand style leads him nearly as often to omit the subject, if this can be understood. But the question here is whether οἶον βούλεται ἡ σὰρξ or τοῦτο βούλεται ἡ φύσις would not naturally suggest ποιεῖν or συμβαίνειν as the verb to be understood, so that the insertion of εἶναι is needed to prevent misapprehension. Cf. *De Sensu* 4, 441 a 3 ἡ μὲν οὖν τοῦ ὕδατος φύσις βούλεται ἄχυνος εἶναι, *ib.* 7, 447 b 10 sq.

a 15. ὥστε. It has just been stated that μεικτόν τι, such as flesh, is necessary to the animal body, and from this it is inferred that it is the medium of touch, the organ of touch being the central organ in the region of the heart. It is obvious that the argument requires that by τὸ σῶμα should be understood not the whole body, but a part of it: in man, the flesh. Yet it is easy to see why σῶμα and not σὰρξ was written, for A. has been speaking of the composition of the animal body in general, and not all animal bodies have flesh; some have a substitute (τὸ ἀνάλογον). The medium δι' οὗ is in this case the animal body itself or such part of it as intervenes without break of continuity between the sense (or organ) of touch (μεταξὺ τοῦ ἀπτικού) and the tangible object, καὶ τοῦ ἀπτοῦ being of course understood. See *Ind. Ar.* 460 b 53 τὸ μεταξύ, vel τὸ μεταξύ τῆς αἰσθήσεως, vel τὸ μεταξύ τοῦ αἰσθητηρίου, id quod interpositum inter τὸ αἰσθητήριον et τὸ αἰσθητὸν utrumque coniungit. Bz. cites not only our present passage 423 a 1—b 26 and 424 b 29, but also *De Sensu* 3, 440 a 18 κρεῖττον φάναι τῷ κινεῖσθαι τὸ μεταξύ τῆς αἰσθήσεως ὑπὸ τοῦ αἰσθητοῦ γίνεσθαι τὴν αἴσθησιν, *ib.* 6, 447 a 8 ὃν ἐστὶ μεταξύ τοῦ αἰσθητηρίου, where there is a medium between the organ and the object. When μεταξύ is used as a preposition, one of the termini is often suppressed. Whether τὸ be inserted before μεταξύ or not, the words μεταξύ τοῦ ἀπτικού προσπεφυκός form an attributive clause which qualifies σῶμα. See critical notes.

a 16. προσπεφυκός. This participle, like the adjective συμφνές, denotes an integral or inseparable part of the organism, something which may be regarded as distinct, but is by natural growth of one piece with the rest. The word could appropriately be used of the supposed membrane, or of the "flesh" as attached to the rest of the body. It is so used in reference to the visual organ of hard-eyed animals *De Part. An.* II. 13, 657 b 34, which see οἶον διὰ τοῦ βλεφάρου προσπεφυκός: *ib.* II. 17, 661 a 11 the word προσπεφυκός is used of the tongue and opposed to ἀπολελυμένον, meaning a tongue which is fixed in its position in the mouth, as opposed to one free from attachments, which can be protruded and retracted. Cf. *Them.* 73, 27 H., 134, 26 Sp. εἰ γὰρ πᾶσα αἴσθησις διὰ τοῦ μεταξύ, καὶ ἡ ἀφή· τοῦ δὲ ἀπτοῦ καὶ τοῦ ἀπτικού οὐδὲν ἐστὶν ἕτερον μεταξύ ἢ τὸ σῶμα, τὸ σῶμα ἄρα τὸ μεταξύ, δι' οὗ γίνεται ἡ ἀντίληψις. διοίσει δὲ τοῦ ἀέρος τε καὶ τοῦ ὕδατος...ὅτι μὴ κεχώρισται ὥσπερ ἐκείνα, ἀλλ' ἐστὶ συμφνές τῷ ζῳῳ. But συμφνές τῷ ζῳῳ is not more correct than A.'s own expression. The fact is that one part of the animal body is attached to the rest to serve as a medium to the sense of touch.

a 18. αἰσθάνεσθαι. I suppose the subject to be the tongue, which will then be said to perceive all tangible qualities at the same part, e.g. the tip, as that at which it perceives flavours. Thus καὶ is correlative to τὸ αὐτό. This gives a better antithesis to a 19 εἰ...ἢ ἄλλη σὰρξ ἢ σθάνετο. So clearly *Simpl.* 162, 33 sqq. and apparently *Philop.* 427, 29 ἡ δὲ γλῶττα καὶ πάντων τῶν ἀπτῶν ἀντιλαμβάνεται καὶ πρὸς τοῦτοις χυμῶν. Others make κατὰ τὸ αὐτὸ μόριον mean "with one and the same organ, viz. the tongue" and suppose αἰσθάνεσθαι to have as its subject ὁ αἰσθανόμενος as in 423 b 25 (ὅς). Professor Beare, p. 192, translates: "for in virtue of the tongue, which is one and the same organ, one has the sensation of all the other objects of touching and also that of taste." To A. it makes no

difference whether (1) the percipient subject or (2) the special sense as part of the sensitive soul or (3) the organ of sense be said *αἰσθάνεσθαι*. For the tip of the tongue as preeminently sensitive to flavour cf. *Hist. An.* II. 9, 492 b 27 ἐν τῷ ἄκρῳ [int. τῆς γλώττης], *De Part. An.* II. 17, 661 a 5 τῷ ἄκρῳ μάλιστα.

a 20. νῦν δὲ δύο, int. δοκοῦσιν εἶναι.

a 21. ἀντιστρέφειν. Cf. Trendl<sup>2</sup>: ἀντιστρέφειν notionēs dicuntur, quae inter se converti possunt, quae adeo inter se respondent, ut, quod una habeat proprium, etiam alteri adsit, ideoque altera in alterius locum substitui possit...ἀντίστροφος significat ex altera parte respondere et quasi ex adverso oppositum esse." See also Cope, *ad Rhet.* I. 1, § 1, p. 1. The word denotes an exact correspondence in detail as a facsimile or counterpart: in logic it is used of propositions "convertible." Hence whatever part of the flesh perceives flavours also perceives tangibles, but we cannot convert the proposition and affirm that whatever part perceives tangibles also perceives flavours. Cf. 406 a 32, *De Interpr.* 13, 22 a 14—16, *Metaph.* 1016 b 28, Them. (74, 2 H., 135, 12—15 Sp.) νῦν δὲ δύο φαίνονται διὰ τὸ μὴ ἀντιστρέφειν τὰ ὄργανα, ἀλλὰ δι' οὗ μὲν μορίου τῶν χυμῶν αἰσθανόμεθα, διὰ τοῦ αὐτοῦ καὶ τῶν ἁπτῶν· δι' οὗ δὲ τῶν ἁπτῶν, οὐ διὰ παντὸς καὶ τῶν χυμῶν. Philop. remarks (422, 6) οὐχ ὡς γλῶττα ἀπτική ἐστίν, ἀλλ' ἢ πᾶν τὸ σῶμα τοιοῦτόν ἐστιν.

**423 a 22—b 27.** Even liquids and fluids have body: which implies three dimensions. Therefore two solid bodies immersed in water (or, for the matter of that, in air) cannot, strictly speaking, ever touch one another: there must always be, although we do not perceive it, a film or layer of fluid or of air interposed [§ 6]. Returning, then, to the question whether touch and taste operate, like the other three senses, through a medium, or not, we decide that hard and soft are perceived through a medium, just as much as the resonant and the odorous; but in the case of the latter, owing to the distance of the object, we are aware of the medium, while the former are close at hand and so we fail to notice the medium. In fact the thin film of air or water which, unperceived, separates bodies apparently in contact, is like the membrane imagined in the illustration given above [§ 7]. The real difference between touch and taste on the one hand, and the three remaining senses on the other, is that in the case of the latter, the medium is acted upon by the object and in turn acts upon the sense-organ, while in touch and taste the medium plays no such part: organ and medium are acted upon together [§ 8]. That the flesh plays the part of medium in touch and the tongue in taste is also made clear by the crucial experiment that an object placed in close contact with the flesh or the tongue is perceived if tangible or gustable. But when the objects of the other three senses are so placed in close contact with the respective sense-organs there is no perception [§ 9].

**423 a 22.** ἀπορήσειε δ' ἂν τις. Here A. takes up a new question. Apart from the correspondence between flesh and air, we must acknowledge that in touch there is never actual contact between sense-organ and object; for we must take account of a film of the medium (air or water) interposed. ἀπορήσειε δ' ἂν τις is taken up at 423 b 1 by πότερον οὖν πάντων ὁμοίως ἐστὶν ἡ αἴσθησις ἢ ἄλλων ἄλλως. εἰ, "if, as is a fact" (*siquidem*). βάθος...23 τὸ τρίτον μέγεθος. Cf. *De Caelo* I. 1, 268 a 7 μεγέθους δὲ τὸ μὲν ἐφ' ἐν [int. διαιρετόν] γραμμῇ, τὸ δ' ἐπὶ δύο ἐπίπεδον, τὸ δ' ἐπὶ τρία σῶμα, *Metaph.* 1020 a 11 μεγέθους δὲ τὸ μὲν ἐφ' ἐν συνεχὲς μήκος, τὸ δ' ἐπὶ δύο πλάτος, τὸ δ' ἐπὶ τρία βάθος, *Top.* VII. 5, 142 b 24 ὁ τοῦ σώματος ὁρισμός, τὸ ἔχον τρεῖς διαστάσεις, *De Caelo* II. 2, 284 b 21 λέγω δὲ τὰ τρία τὸ ἄνω καὶ κάτω, καὶ τὸ πρόσθιον καὶ τὸ ἀντικείμενον, καὶ τὸ δεξιὸν καὶ τὸ ἀριστερόν· ταύτας γὰρ τὰς διαστάσεις εὐλογον ὑπάρχειν τοῖς σώμασι τοῖς τελείοις πάσας. ἔστι

δὲ τὸ μὲν ἄνω τοῦ μήκους ἀρχή, τὸ δὲ δεξιὸν τοῦ πλάτους, τὸ δὲ πρόσθεν τοῦ βάθους. Cf. also *De Gen. et Corr.* I. 2, 315 b 28 sqq., where the atomistic analysis of solids is contrasted with that of Plato in the *Timaeus*.

a 23. ὦν...δύο σώματων. The construction is: τὰ δύο σώματα ὦν μεταξύ ἐστὶ σῶμά τι, ταῦτα οὐκ ἐνδέχεται ἀλλήλων ἄπτεσθαι. The antecedent σώματα is attracted into the case of the relative ὦν and taken up again by ταῦτα.

a 24. οὐκ ἔστιν ἔνεν σώματος, "cannot exist apart from body," in which as a quality it inheres. A. constantly reiterates that qualities and attributes are not independent entities: πάθη and συμβεβηκότα cannot be separated from οὐσία or τόδε τι. Liquid implies liquid body, which must have three dimensions.

a 25. τὸ διερόν. The word is defined in *De Gen. et Corr.* II. 2, 330 a 16 sq. as τὸ ἔχον ἀλλοτριαν ὑγρότητα ἐπιπολῆς, βεβεργμένον δὲ τὸ εἰς βάθος...τὸ μὲν διερόν ἔσται τοῦ ὑγροῦ. It seems, in the context, peculiarly applicable to a solid body like fish immersed in water; so that εἰ διερόν διεροῦ ἄπτεται (*infra* 423 b 1) practically means "whether fish touches fish," or any two things immersed in water which are in apparent contact.

a 26. μὴ ξηρὸν τῶν ἄκρων ὄντων. This condition limits the reference to things actually exposed to the water, and excludes the case of things in contact with one another inside a waterproof chest, bottle or sack. The ἄκρα are the "outermost parts," that is the "outside," in contrast with the "interior." While a thing thus wet on the outside is διερόν, a thing wetted through and through (βεβεργμένον) is defined as τὸ εἰς βάθος (ἀλλοτριαν ὑγρότητα ἔχον) *De Gen. et Corr., loc. cit.*

a 27. μεταξύ, "between them," i.e. in between their apparently contiguous surfaces. τὰ ἔσχατα means the same as τὰ ἄκρα above, "outside surfaces," not "extremities." Cf. *infra* 423 b 22 τοῦ ὅμματος...τὸ ἔσχατον.

a 28. εἰ δὲ τοῦτ'...ὑδατι, τὸν αὐτὸν κτέ. A comma seems quite sufficient here. Bekker puts a period and Biehl a colon.

a 29. τὸν αὐτὸν δὲ τρόπον, int. ἀδύνατόν ἐστιν ἄψασθαι ἄλλο ἄλλον.

a 30. λανθάνει δὲ μᾶλλον, we fail to notice, we are less ready to discern it. What *were* are more apt to overlook is that there is no actual contact even of things in air.

a 31. ὥσπερ καὶ κτέ., i.e. ὥσπερ καὶ τὰ ἐν τῷ ὑδατι ζῶα λανθάνει εἰ.

423 b 1. εἰ. For εἰ="the fact that," cf. 421 b 13.

b 1. πότερον οὖν. Though the question is really dependent on ἀπορήσειε δ' ἂν τις 423 a 22, the οὖν (resumptive after a digression) shows that the writer is unconscious of this dependence, and the whole paragraph becomes slightly anacoluthic. A. is of opinion that the dissimilarity in the manner of perception is only apparent. Flesh, he thinks, is the medium of touch and taste, and the objects of these two senses are really at a distance from the seat of perception. A. leads up to and brings out the view that there is never actual contact. The membrane of the illustration has a counterpart in the film of air or water which separates two things supposed to be in contact.

b 4. τὸ δ', "but this." Although no τὸ μὲν has preceded, the article, as in *πρὸ τοῦ*, τὸ καὶ τὸ, is really a demonstrative pronoun. Cf. 408 b 5.

b 6. τὰ μὲν, i.e. τὸ ψοφητικὸν καὶ τὸ δρατὸν καὶ τὸ δσφραντὸν, while τὰ δ' = τὸ σκληρὸν καὶ τὸ μαλακόν. διὰ, i.e. because they are so near.

b 7. αἰσθανόμεθά γε. The fact is so at any rate, whether we notice it or not.

b 8. ἐπὶ τούτων, i.e. in the case of "hard" and "soft." This is the immediate reference of the pronoun, though "hard" and "soft" merely stand as representative of all objects of touch and taste. καὶ πρότερον, *supra* 423 a 2 sqq.



b 9. **λανθάνοντος**. The participle agrees with *ὑμένος*. This seems a simpler view than to make it a genitive absolute, though in translation we may conveniently treat it as if it were such: "the fact of its being interposed escaping us," "of whose intervention we are not conscious."

b 11. **δοκοῦμεν**, "we fancy," this is the ordinary opinion (*καθάπερ νῦν δοκεῖ* 423 b 2). Though incorrect in not taking account of the film, the ordinary view is nevertheless substantially correct, because there is a distinction between the three senses of sight, hearing and smell, which operate at a distance, and the two senses of touch and taste, which operate near at hand. A. himself so far sympathises with and shares the popular belief that, in spite of all his efforts in this chapter to demonstrate a medium for touch, we find him talking like other people of immediate contact with the tangible 424 b 27 *καὶ ὅσων μὲν αὐτῶν ἀπτόμενοι αἰσθανόμεθα...* (b 29) *ὅσα δὲ διὰ τῶν μεταξὺ καὶ μὴ αὐτῶν ἀπτόμενοι* (by the latter he intends objects of sight, smell and hearing), 435 a 17 *ἢ δ' ἀφή τῷ αὐτῶν ἄπτεσθαί ἐστιν*.

b 16. **οὐ γὰρ ἡ ἀσπίς**. Somewhat similar is the case of motion produced *per accidens* in *Phys.* VIII. 4, 255 b 27 *ὥσπερ καὶ ἡ ἀνακλασθεῖσα σφαῖρα οὐχ ὑπὸ τοῦ τοίχου ἐκινήθη ἀλλ' ὑπὸ τοῦ βάλλοντος*. **ἄμ' ἄμφω**. The illustration chosen by A. is not particularly good; because even if, with Philop. (432, 7 sq.), we suppose the shield to be struck by a stone and not transfixed with a spear, the striking of the man's body can hardly be simultaneous with the striking of the shield. It will be seen that A. makes no attempt to show that there are any vibrations in flesh analogous to the disturbances of the medium of which we heard when discussing the three senses sight, hearing, smell.

b 17. **ἡ γλῶττα**. The tongue is clearly regarded as a special case of "the flesh."

b 18 **ὅψιν...ἀκοήν...ἰσφρησιν**, here the organs of sight, hearing and smell respectively. See note on 417 a 3.

b 19. **ὥσπερ ἐκέλεων ἕκαστον**. This redundant *ὥσπερ* clause reiterates, and so emphasises, the analogy already expressed by the clause beginning with *ὥς ὁ αἶψα*. Something similar occurs 417 a 9—13 where a 13 *ὁμοίως* introduces a restatement of the clause a 9 *ἐπειδὴ κτέ.*: cf. 431 b 12 *τὰ δὲ ἐν ἀφαιρέσει λεγόμενα νοεῖ ὥσπερ...* 15 *οὕτω τὰ μαθηματικά, Μεταφρ.* 1002 b 5 *παραπλησίως δ' ἔχει...* (b 8) *ὁμοίως δὲ δῆλον ὅτι ἔχει*. Cf. also Plato, *Phaedo* 109 E, *Crito* 54 D, *Crat.* 433 A, cited by Riddell, *Digest of Platonic Idioms*, § 209. The sequence *ὥς...οὕτως...* *ὥς* is more common in poetry.

b 21. **οὐτ' ἐκεῖ οὐτ' ἐνταῦθα**, "neither in the case of sight, hearing and smell (*ἐκεῖ*), nor in the case of taste and touch (*ἐνταῦθα*)."

b 22. **ἣ καὶ δῆλον**: so 426 b 15. The dative is causal, rather than modal, like our "whereby it is also clear," or *ἣ καὶ μάλλον* in Thucydides, e.g. IV. 1, 3. Cf. *Pol.* 1272 a 3, *De Gen. et Corr.* I. 1, 314 b 26.

b 23. **ὅτι ἐντός**, int. *ἐστί*, is inside the body. The region of the heart is nowhere precisely indicated in *De A.* or *De Sensu* or *De Mem.*: it is sometimes mentioned, more often alluded to, in the physiological or biological treatises. See *De Iuv.* 3, 469 a 4 *ἡ δὲ καρδία κυριωτάτη...* a 10 *ἀλλὰ μὴν τό γε κύριον τῶν αἰσθήσεων ἐν ταύτῃ* [int. *τῇ καρδίᾳ*] *τοῖς ἐναίμοις πᾶσιν ἐν τούτῳ γὰρ ἀναγκαῖον εἶναι τὸ πάντων τῶν αἰσθητηρίων κοινὸν αἰσθητήριον. δύο δὲ φανερώς ἐνταῦθα συντείνουσας ὁρῶμεν, τὴν τε γεῦσιν καὶ τὴν ἀφήν, ὥστε καὶ τὰς ἄλλας ἀναγκαῖον*. From this passage it would appear that the same is true for the other senses, viz. that the true seat of sensation is internal, and not, as some passages imply, in the external sense-organ. Cf. *De Iuv.* 3, 469 a 20 *διὰ τί δ' αἱ μὲν τῶν αἰσθήσεων φανερώς συντείνουσι πρὸς τὴν καρδίαν, αἱ δ' εἰσὶν ἐν τῇ κεφαλῇ...τὸ αἴτιον τούτων*

ἐν ἑτέροις εἴρηται χωρίς. The transmission of corporeal κινήσεις A. supposed to take place along the blood-vessels, all of which terminate in the heart. οὕτω γάρ, i.e. on this view and on this view only, namely that the seat of touch is within, do we get a consistent account, applicable to the action of all the senses. It will then be true of all that what is placed upon the organ is not perceived, even if what is placed upon the flesh is perceived by touch. Cf. 419 a 12, 421 b 16.

b 25. αἰσθάνεται, int. δ αἰσθανόμενος, the percipient subject.

**423 b 27—424 a 16.** Objects of touch are the different qualities of body as such, hot and cold, dry and moist, the fundamental qualities which differentiate the four elements [§ 10]. And the sense-organ of touch, that is, the primary sense-organ, is potentially possessed of these qualities. Hence we do not perceive a quality (e.g. temperature) when it is uniform in degree with our own, but only when it is in excess or defect as compared with ourselves. The sense being a mean between extremes can judge sensible objects, which are extremes [§ 11]. The range of touch, as of the other senses, includes the special sensible itself and its opposite, in this case the tangible and intangible, the latter term including what is barely perceptible by touch, as air, and what is so violent as to destroy the sense [§ 12].

423 b 27. ἡ σῶμα, int. ἐστὶ. The same thing is said from the opposite side, *De Gen. et Corr.* II., c. 2 *ad init.* We set out in search of αἰσθητοῦ σώματος ἀρχάς, i.e. ἀπτοῦ σώματος or οὐδ' ἡ αἴσθησις ἀφή, whence the conclusion (329 b 8) φανερόν ἐστι οὐ πᾶσαι αἱ ἐναντιώσεις σώματος εἶδη καὶ ἀρχαὶ ποιοῦσιν, ἀλλὰ μόνον αἱ κατὰ τὴν ἀφήν. There A. asks what are the qualities of body as such and replies the opposites which fall under touch. Here in *De A.* he has to enumerate the different qualities that fall under touch and says they are the properties of body as such.

b 28. διορίζουσι. For the manner in which the different combinations of these primary contraries, two and two, determine the four "simple bodies" (ἀπλὰ σώματα), the so-called "elements" (στοιχεῖα), see *De Gen. et Corr.* II., cc. 2 and 3. In building up things, A. starts from matter regarded as pure potentiality. He then takes four primary qualities and puts them together in pairs: the hot with the dry constitutes Fire, the hot with the moist Air, the cold with the moist Water, the cold with the dry Earth.

b 30. αὐτῶν, i. q. τῶν ἀπτῶν, viz. θερμὸν ψυχρὸν, ξηρὸν ὑγρὸν. τὸ ἀπτικόν, in agreement with τὸ αἰσθητήριον. καὶ, explicative.

b 30 ἡ καλουμένη ἀφή... 31 αἴσθησις. I accept the word αἴσθησις inserted by E T Wy and Simpl. ἡ καλουμένη ἀφή αἴσθησις = "the sense which is called touch," as in *Pol.* 1262 a 24 ἡ ἐν Φαρσάλῳ κληθεῖσα Δικαία ἵππος = "the mare called Dicaea." All four words are to be taken together, the construction being interrupted by hyperbaton of ὑπάρχει. It may be that A. speaks thus because he does not regard contact of the object with the flesh (which he is here considering) as truly touch. True touch is the action of the object (through the flesh) upon the internal organ. Cf., however, 420 b 28, 407 a 4, 429 a 22.

b 31. πρώτῳ. See *note* on 422 b 22. It is expressly said in 426 b 15 that flesh is not the real organ of sense as such, there called ἔσχατον. τοιούτων, i.e. "hot, cold, dry and moist," in fact possessing, but only potentially, the qualities actually possessed by tangible things.

424 a 1. πάσχαν τι. Cf. 416 b 33, 417 a 15. The word τι might be taken as in agreement with πάσχειν (see *note* on 410 a 25), but to make it the accusative governed by πάσχειν gives an equally satisfactory sense and is supported by the parallel account of δομᾶσθαι 424 b 17. Cf. 419 a 18, 424 a 34, b 16, in

all of which  $\tau\iota$  is governed by  $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$ .  $\omega\sigma\tau\epsilon\ \tau\acute{o}\ \pi\omicron\iota\omicron\upsilon\nu\ldots\acute{\epsilon}\nu\epsilon\rho\gamma\acute{\epsilon}\alpha$ . This is very concise. The full construction would be  $\tau\acute{o}\ \pi\omicron\iota\omicron\upsilon\nu\ \tau\acute{o}\ \acute{\alpha}\pi\tau\iota\kappa\acute{o}\nu\ \tau\omicron\iota\omicron\upsilon\tau\omicron\nu\ \acute{\epsilon}\nu\epsilon\rho\gamma\acute{\epsilon}\alpha\ \omicron\iota\omicron\nu\ \alpha\upsilon\tau\acute{o}$  [i. q.  $\tau\acute{o}\ \acute{\alpha}\pi\tau\acute{o}\nu$ , which is  $\tau\acute{o}\ \pi\omicron\iota\omicron\upsilon\nu$ ]  $\eta\delta\eta\ \acute{\epsilon}\nu\epsilon\rho\gamma\acute{\epsilon}\alpha\ \acute{\epsilon}\sigma\tau\acute{\iota}\nu$ , where the predication of  $\pi\omicron\iota\acute{\epsilon}\iota\nu$  is incomplete without  $\acute{\epsilon}\nu\epsilon\rho\gamma\acute{\epsilon}\alpha$ . The tangible object makes the organ in actuality such as the object itself is already in actuality.

a 2.  $\tau\omicron\iota\omicron\upsilon\tau\omicron\nu\ \acute{\epsilon}\kappa\epsilon\acute{\iota}\nu\omicron\ \pi\omicron\iota\acute{\epsilon}\iota\ \delta\upsilon\nu\acute{\alpha}\mu\epsilon\iota\ \delta\upsilon$ . As I understand this,  $\tau\omicron\iota\omicron\upsilon\tau\omicron\nu$  goes with  $\delta\upsilon\nu\acute{\alpha}\mu\epsilon\iota\ \delta\upsilon$  and not with the preceding  $\omicron\iota\omicron\nu\ \alpha\upsilon\tau\acute{o}$ . In the formula we generally have  $\delta\upsilon\nu\acute{\alpha}\mu\epsilon\iota\ \tau\omicron\iota\omicron\upsilon\tau\omicron\nu$ , though nowhere else at such length. In either case  $\tau\omicron\iota\omicron\upsilon\tau\omicron\nu$  is strangely misplaced.  $\pi\omicron\iota\acute{\epsilon}\iota$  is used as a verb of complete predication = "acts upon," correlative to  $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$ , "to be acted upon": cf. 407 b 18  $\tau\acute{o}\ \mu\acute{\epsilon}\nu\ \pi\omicron\iota\acute{\epsilon}\iota\ \tau\acute{o}\ \delta\acute{\epsilon}\ \pi\acute{\alpha}\sigma\chi\epsilon\iota$ , 423 b 14, 424 b 10  $\omicron\upsilon\delta\acute{\epsilon}\nu\ \pi\omicron\iota\acute{\epsilon}\iota\ \tau\acute{\alpha}\ \sigma\acute{\omega}\mu\alpha\tau\alpha$ , 429 b 26, 430 a 19. This use of  $\pi\omicron\iota\acute{\epsilon}\iota$  is very common in other treatises, e.g. *Meteor.* IV. 8, 385 a 2, 4  $\pi\omicron\iota\acute{\epsilon}\iota\nu\ \tau\iota\ \delta\upsilon\nu\alpha\sigma\theta\alpha\iota\ \tau\eta\nu\ \alpha\acute{\iota}\sigma\theta\eta\sigma\iota\nu$  (the subject of the verb there including  $\theta\epsilon\rho\mu\acute{o}\nu$ ,  $\psi\upsilon\chi\rho\acute{o}\nu$ ), IV. 12, 390 a 18  $\acute{\alpha}\nu\tau\alpha\ \gamma\acute{\alpha}\rho\ \delta\upsilon\nu\acute{\alpha}\mu\epsilon\iota\ \tau\omega\iota\ \acute{\epsilon}\sigma\tau\iota\nu\ \eta\ \tau\omicron\upsilon\ \pi\omicron\iota\acute{\epsilon}\iota\nu\ \eta\ \tau\omicron\upsilon\ \pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$ .  $\acute{\epsilon}\kappa\epsilon\acute{\iota}\nu\omicron$  is of course the sense-organ. Others prefer to make  $\tau\acute{o}\ \pi\omicron\iota\omicron\upsilon\nu$  the agent, taking it in the same manner as I take  $\pi\omicron\iota\acute{\epsilon}\iota$  and joining  $\tau\omicron\iota\omicron\upsilon\tau\omicron\nu$  with the preceding  $\omicron\iota\omicron\nu\ \alpha\upsilon\tau\acute{o}$ . In that case it would be better to remove the comma after  $\acute{\epsilon}\nu\epsilon\rho\gamma\acute{\epsilon}\alpha$ . So Trend.: *iungas hoc modo*:  $\omega\sigma\tau\epsilon\ \tau\acute{o}\ \pi\omicron\iota\omicron\upsilon\nu\ \pi\omicron\iota\acute{\epsilon}\iota\ \acute{\epsilon}\kappa\epsilon\acute{\iota}\nu\omicron\ \delta\upsilon\nu\acute{\alpha}\mu\epsilon\iota\ \delta\upsilon\ \tau\omicron\iota\omicron\upsilon\tau\omicron\nu\ \omicron\iota\omicron\nu\ \alpha\upsilon\tau\acute{o}\ \acute{\epsilon}\nu\epsilon\rho\gamma\acute{\epsilon}\alpha$ . *Relativa effecerunt, ut quae verba effectum indicant, non, qui quidem iustus est sententiarum ordo, sequantur sed praeposita sint.* If Trend. were right, we might compare 418 a 23  $\omicron\upsilon\delta\acute{\epsilon}\nu\ \pi\acute{\alpha}\sigma\chi\epsilon\iota\ \eta\ \tau\omicron\iota\omicron\upsilon\tau\omicron\nu\ \acute{\upsilon}\pi\acute{o}\ \tau\omicron\upsilon\ \alpha\acute{\iota}\sigma\theta\eta\tau\omicron\upsilon$ . How cumbrous this is may be seen from Professor Beare's version (p. 195) "the (agent or) object so acts upon the organ (the patient) as to impart to the latter *actually* the quality which the object itself actually has, but which the organ before had only potentially": whereas, if we conceive  $\tau\acute{o}\ \pi\omicron\iota\omicron\upsilon\nu\ [\tau\omicron\iota\omicron\upsilon\tau\omicron\nu]$   $\omicron\iota\omicron\nu\ \alpha\upsilon\tau\acute{o}\ \acute{\epsilon}\nu\epsilon\rho\gamma\acute{\epsilon}\alpha$  to be merely a periphrasis for the agent, describing it from the final result of its agency, and so get rid of that part of the formula, room is left for special insistence on the potential likeness between agent and patient. The agent which assimilates the patient to itself finds the way prepared, for it acts upon something potentially like itself. Hammond neatly renders "whatever makes another thing to be in reality like itself does so by virtue of that thing's having this nature in potentiality": but he does not appear to take  $\acute{\epsilon}\nu\epsilon\rho\gamma\acute{\epsilon}\alpha$  with  $\alpha\upsilon\tau\acute{o}\ (\acute{\epsilon}\sigma\tau\iota)$ .

a 2.  $\delta\iota\delta\acute{o}$ . The change from  $\delta\upsilon\nu\acute{\alpha}\mu\epsilon\iota\ \tau\omicron\iota\omicron\upsilon\tau\omicron\nu$  to  $\acute{\epsilon}\nu\epsilon\rho\gamma\acute{\epsilon}\alpha\ \tau\omicron\iota\omicron\upsilon\tau\omicron\nu$ , which takes place in the act of sensation, explains why, when the object which we touch is as hot or cold, as hard or soft, as the organ of touch, we have no perception of hot or cold, hard or soft, from it. If the temperature or resistance of  $\acute{\alpha}\pi\tau\iota\kappa\acute{o}\nu$  and  $\acute{\alpha}\pi\tau\acute{o}\nu$  were equal, no change would take place. It will be observed that the organ, whether it be internal or the flesh, has its own temperature and its own degree of hardness or softness when it is not functioning as an organ of touch. *Quia* organ, it may be  $\delta\upsilon\nu\acute{\alpha}\mu\epsilon\iota\ \tau\omicron\iota\omicron\upsilon\tau\omicron\nu$ , but it is also in actuality of this or that temperature, this or that hardness or softness. If we touch something and pronounce it hard, the hand itself must be soft as compared with what it touches: and similarly if with the same hand we touch something else and pronounce it soft, the hand must be hard compared with what it now touches. The same hand, then, must be soft to the one thing, hard to the other, and we perceive in the first case the excess and in the second case the defect of hardness in the object as compared with the hand: the hand itself, then, in point of resistance, lies between the two. Cf. *Meteor.* IV. 4, 382 a 17  $\acute{\epsilon}\pi\epsilon\acute{\iota}\ \delta\acute{\epsilon}\ \pi\rho\acute{o}\varsigma\ \tau\eta\nu\ \alpha\acute{\iota}\sigma\theta\eta\sigma\iota\nu\ \acute{\alpha}\nu\tau\alpha\ \kappa\rho\acute{\iota}\nu\omicron\mu\epsilon\nu\ \tau\acute{\alpha}\ \alpha\acute{\iota}\sigma\theta\eta\tau\acute{\alpha}$ ,  $\delta\eta\lambda\omicron\nu\ \acute{\omicron}\tau\iota\ \kappa\alpha\iota\ \tau\acute{o}\ \sigma\kappa\lambda\eta\rho\acute{o}\nu\ \kappa\alpha\iota\ \tau\acute{o}\ \mu\alpha\lambda\alpha\kappa\acute{o}\nu\ \acute{\alpha}\pi\lambda\acute{\omega}\varsigma\ \pi\rho\acute{o}\varsigma\ \tau\eta\nu\ \acute{\alpha}\phi\eta\nu\ \acute{\omega}\rho\acute{\iota}\kappa\alpha\mu\epsilon\nu$ ,  $\acute{\omega}\varsigma\ \mu\epsilon\sigma\acute{o}\tau\eta\tau\iota\ \chi\rho\acute{\omega}\mu\epsilon\nu\omicron\iota\ \tau\eta\ \acute{\alpha}\phi\eta$ .  $\delta\iota\acute{o}\ \tau\acute{o}\ \mu\acute{\epsilon}\nu\ \acute{\upsilon}\pi\epsilon\rho\beta\acute{\alpha}\lambda\lambda\omicron\nu\ \alpha\upsilon\tau\eta\varsigma\ \sigma\kappa\lambda\eta\rho\acute{o}\nu$ ,  $\tau\acute{o}\ \delta' \acute{\epsilon}\lambda\lambda\acute{\epsilon}\iota\pi\omicron\nu\ \mu\alpha\lambda\alpha\kappa\acute{o}\nu\ \acute{\epsilon}\nu\alpha\acute{\iota}\ \phi\alpha\mu\epsilon\nu$ .

**a 4.** ὡς τῆς αἰσθήσεως. On ὡς with an absolute case, "a fact which implies," see *note* on 411 b 26. Cf. 426 b 3. Whether the inference is confined to touch or includes sense in general was not clear to Philop. (435, 25) αἰσθησιν νῦν τὸ αἰσθητήριον λέγει, μεσότηα δ' εἶπε τὴν αἰσθησιν ἥτοι τὴν ἀφήν (περὶ ταύτης γὰρ νῦν ὁ λόγος) ἢ καὶ πᾶσαν. It is unimportant, for the general conclusion must be reached by induction from the particular senses and, as we see 424 a 7—9, A. regards the induction as complete for the other senses.

**a 4** μεσότητος...5 ἐναντιώσεως. Here we must anticipate the general conclusion to which the examination of each special sense has brought us nearer. A. says, 426 b 8—12, that each special sense has its own province or γένος, bounded by a pair of opposites. All the sensible objects which come under its ken exhibit some quality (colour, odour, temperature, humidity, resistance), but in infinitely varying degrees. To perceive colour is to perceive white or black, or any of the various shades lying between the two. To perceive temperature is to be made sensible of what is extremely hot or extremely cold or is at any degree of heat or cold intermediate. Thus to the single province of each special sense corresponds a single contrariety, a sort of scale ranging from opposite to opposite and including every possible difference. See *note* on 422 b 23 μίᾱς ἐναντιώσεως. The sense, we know, is potentially any of its special sensibles and is assigned an intermediate position in the scale from opposite to opposite formed by them. This is obvious in regard to temperature. Our normal temperature is a mean between the opposite extremes, that is, the highest and lowest degrees of temperature perceived by us. The sense-organ has an intermediate place in the scale. It is constituted by different elements and hence is itself called their combining proportion, or the ratio of their admixture: cf. 426 b 3, 7 λόγος [int. τῆς μείξεως]. The term μεσότης recurs 431 a 11, 19, 435 a 21. It is implied that the organ, being neutral or indifferent, is capable of receiving the opposite determinations.

**a 5.** διὰ τοῦτο. Because it is a mean and a mean is the best empirical standard. κρίνει. See 411 a 4 and *note*. The discrimination, which is implied in all perception, has not been hitherto specially emphasised in the treatment of the several senses, but from 426 b 10 it is clear that it belongs to every act of sensation. To perceive an object by sense, to pronounce a judgment upon it, to receive its form without the matter, are various modes of describing what is substantially one and the same act. Cf. κρίνει 418 a 14, 422 a 21.

**a 6.** πρὸς ἑκάτερον αὐτῶν, relatively to each of the extremes in turn. The subject to γίνεταί is τὸ μέσον. Cf. *Etℎ. Nic.* 1108 b 15 ὥσπερ γὰρ τὸ ἴσον πρὸς μὲν τὸ ἔλαττον μείζον πρὸς δὲ τὸ μείζον ἔλαττον, οὕτως αἱ μέσαι ἕξεις πρὸς μὲν τὰς ἐλλείψεις ὑπερβάλλουσι πρὸς δὲ τὰς ὑπερβολὰς ἐλλείπουσιν ἔν τε τοῖς πάθεσι καὶ ταῖς πράξεσιν. ὁ γὰρ ἀνδρείος πρὸς μὲν τὸν δειλὸν θρασὺς φαίνεται, πρὸς δὲ τὸν θρασὺν δειλός. Cf. *Phys.* VIII. 8, 262 a 19 (where A. is speaking of points on a line) τριῶν γὰρ ὄντων ἀρχῆς μέσου τελευτῆς, τὸ μέσον πρὸς ἑκάτερον ἄμφω ἐστὶ: cf. 262 a 21—26.

**a 7.** ὥσπερ τὸ μέλλον. Cf. *συῖρα* 417 a 6 δηλον ὅν ἐτι τὸ αἰσθητικὸν οὐκ ἔστιν ἐνεργεία ἀλλὰ δυνάμει μόνον κτέ.

**a 10.** καὶ ἀοράτου. Cf. 418 b 26—29, 422 a 20 sqq.

**a 11.** ἦν, "is, as we saw." Cf. 419 a 9, 424 a 31.

**a 11.** πως. Cf. 422 a 22 ἄλλον δὲ τρόπον τοῦ σκοτοῦς. ἀντικειμένων, int. ἦσαν. This was shown for smelling 421 b 5 sq., for tasting 422 a 29.

**a 12.** ἀναπτον. The intangible may be that which has too small a differential quality to be perceived by touch, or it may have the quality in large excess, so that it is more than the organ can take in without suffering.

a 13. *διαφοράν*, "qualitative difference," almost the same as quality. Air resembles ourselves, being not very hot or very cold, and the small difference of temperature causes it to have a very small differential quality. Cf. Them. 77, 24 H., 141, 28 Sp. *ἀναπτον δὲ τό τε μικρὰν παντάπασιν ἔχον καὶ ἀμυδρὰν τῶν ἀπτῶν διαφοράν*, Philop. 436, 24 *τὰ ἡρέμα ἀπτά· τοιαῦτα δ' ἂν εἴη τὰ μὴ πολὺ ἀφεστηκότα τῶν αἰσθητήριων κατὰ τὰς ἀπτάς ποιότητας*. So taken, *διαφοράν τῶν ἀπτῶν* practically=*διαφοράν ἀπτῆν*. It is possible, however, to take *τῶν ἀπτῶν* as a partitive genitive depending upon *τὸ ἔχον*, "that of tangibles which has an extremely slight difference." Or, if *διαφορά*= "distinctive character," "that of tangibles which has the [tangible] quality in an extremely slight degree." So Professor Beare, p. 196, with *note* 2. The parallel passages 421 b 7 sq., 422 a 30 lead us to expect the accusative after *ἔχον* to be that which in touch corresponds to *ὁσμὴ* and *χυμός*: and, as this has no name (cf. 422 b 32 sq.), it may very well be replaced by *διαφοράν τῶν ἀπτῶν*.

Madvig, *Adversaria* 1. 472, proposed *τῶν ἀπτόντων* for *τῶν ἀπτῶν* and would then translate *διαφοράν* "difference," not "quality." The clause would then run "*ἀναπτον* includes tangibles very slightly different (in temperature etc.) from those touching," i.e. from the subject. Thus Madvig makes A. insert a clause explaining why things with small differential qualities are termed intangible.

a 14. *πέπονθεν*. Cf. 430 a 13. *τῶν ἀπτῶν αἱ ὑπερβολαί*. Here *τῶν ἀπτῶν* should naturally bear the same sense as in the preceding line, which makes against Madvig's proposed change. In 424 a 4 *τῶν ὑπερβολῶν* means no more than the excess of the quality over that of the sense-organ which is necessary to sense-perception at all, if it consists in the transition from *δύναμις* to *ἐνέργεια*. Here it means extravagant excess of quality, deranging the organ as such. Cf. 424 a 29, 426 a 30, b 7, 435 b 8, 15, 18.

a 15. *φθαρτικά*. Violent excesses of the quality in the object derange and destroy the sense-organ in its attempt to apprehend them. Cf. 422 a 31, 33, 421 b 23—25.

## CHAPTER XII.

**424 a 17—28.** Sense in general must be understood to be the recipient of various sensible forms apart from the matter. As wax receives the impression of the signet-ring without the material, iron, gold, or bronze, that is, takes the imprint of the material, but not *qua* material, so sense is affected by objects possessing colour, flavour, or sound, not as so many concrete objects, but as coloured, flavoured, or sonorous, that is, in respect of their notion or character [§ 1]. As soon as any part of the organism exhibits this sort of capacity, we have a sense-organ. Thus the organ and the faculty are identical, though in aspect different: the organ which perceives being something extended, while sensitivity, or sense in the abstract, instead of being something extended, is, so to say, a character or capacity of the organ [§ 2].

424 a 17. *καθόλου*. The five senses have been severally treated in chapters 7 to 11. It remains to consider what statements we can make concerning all the senses collectively, that is concerning sense as a whole (412 b 24). See *note* on 410 b 26. *τί μὲν αἰσθησις*. What precisely is "sense," which we here proceed to define? Is it the organ or the faculty? The answer, given in 424 a 24 sq., is that it is both: or rather organ and faculty are one and the same under different aspects. And so we must interpret the useful, if somewhat less

exact, summary 426 b 8 *ἐκάστη μὲν οὖν αἰσθησις τοῦ ὑποκειμένου αἰσθητοῦ ἐστίν, ὑπάρχουσα ἐν τῷ αἰσθητηρίῳ ἢ αἰσθητήριον, καὶ κρίνει τὰς τοῦ ὑποκειμένου αἰσθητοῦ διαφοράς, οἷον λευκὸν μὲν καὶ μέλαν ὄψις, γλυκὺ δὲ καὶ πικρὸν γεύσις. ὁμοίως δ' ἔχει τοῦτο καὶ ἐπὶ τῶν ἄλλων.*

a 18. *δεκτικόν.* Cf. 418 b 26 *ἔστι δὲ χρώματος μὲν δεκτικὸν τὸ ἄχρουν, ψόφον δὲ τὸ ἄψοφον.* Sense is "receptive" as being "passive" or "acted upon" and also as being potentially what the object is actually. The same statement is made of *τὸ αἰσθητήριον* 425 b 23, 435 a 22. Cf. also 414 a 8—10, 429 a 15. *τῶν αἰσθητῶν εἰδῶν.* Sensible objects have form as well as matter. Sense, as we shall see, is form, and, as such, it apprehends form. The "sensible forms" of the text are therefore the forms of sensible things, the qualities in them which constitute them what they are, the red of the red thing, the sound of the resonant thing, the flavour of the flavoured thing. Each of these qualities, taken in itself, is a universal, or *καθόλου*, in A.'s language *τοιόνδε*, not *τόδε τι*, *Anal. Post.* I. 31, 87 b 28 sq.

a 19. *τοῦ δακτυλίου* depends grammatically upon a 20 *τὸ σημεῖον.* It is placed thus early and close to *ὁ κηρὸς* in order to correspond to *τῶν αἰσθητῶν εἰδῶν* in relation to *τὸ δεκτικόν.*

a 21. *οὐχ ἢ χρυσός*, int. *ὁ δακτύλιός ἐστι*, "not in so far as the ring is gold...." Note that this phrase replaces the *ἀνευ...τοῦ χρυσοῦ* of the previous clause. With this use of the simile compare *De Mem.* I, 450 a 30—b 3 *ἢ γὰρ γιγνομένη κίνησις ἐνσημαίνεται οἷον τύπον τινὰ τοῦ αἰσθήματος, καθάπερ οἱ σφραγιζόμενοι τοῖς δακτυλίοις κτέ.*, where it is applied not to the original "motion" of sensation but to the subsequent retention or survival of that motion in *φαντασία*. Cf. *De A.* 428 b 10 sqq.

a 22. *ἐκάστων.* The genitive must express the special sensible in each case: 426 b 8 *τοῦ ὑποκειμένου αἰσθητοῦ*, 428 b 18 *ἡ αἴσθησις τῶν μὲν ἰδίων.* Thus *ἐκάστων* = whatever it be that sense perceives, whether colour or sound or flavour. Cf. 425 b 24, 430 b 6, also 426 b 16 *αὐτοῦ=τοῦ αἰσθητοῦ.* Similarly 418 a 17 "such and such objects are called special sensibles of the sense, whatever it be, which perceives them."

a 23. *ἢ ἕκαστον ἐκείνων λέγεται.* This means that the object acts upon sense not in so far as it is a concrete object, but in so far as it is coloured or flavoured, or sonorous: e.g. when we perceive the white rose by sight, it is not the rose *quā* rose, but the rose *quā* white, which acts upon the sight. The ring impresses the wax, not *quā* metal, but in so far as it has a particular shape. *τὸ ἔχον χρῶμα* is some particular object, *τόδε τι*, yet it is not as *τόδε τι* or *τοῦτο* that it acts upon sense, but solely as *τοιονδί*, coloured. Hence *ἐκείνων* refers to 424 a 22 *τοῦ ἔχοντος...23 ψόφον, ἐκείνων* being rightly used for "the other things" or the substances possessed of sensible qualities as distinguished from the sensible qualities themselves to which sense is related: cf. a 22 *ἡ αἴσθησις ἐκάστων.* We may ask, is *ἕκαστον* subject or predicate? If it is subject, as seems probable, it must be understood again as predicate, for *τοιονδί* is predicate (a 24) and *ἕκαστον ἐκείνων* must correspond to *τοιονδί*; or, which comes to the same thing, *λέγεται* must be taken = "is so called," is called what it is, viz. some individual concrete thing. Cf. 412 a 8, 429 b 6, *Metaph.* 1018 b 3 *καὶ τὰ ἐναντία ἕτερα τῷ εἶδει ἄλλῳ ἢ πάντα ἢ τὰ λεγόμενα* [int. *ἐναντία*] *πρώτως*, called contraries in the primary sense of the term.

a 24. *τοιονδί.* This serves as a general term for "coloured, flavoured, sonorous," or for epithets denoting particular colours, flavours or sounds, "white etc., sweet etc., shrill etc." A. commonly uses *τοιονδί* as opposed to *τόδε τι* for the category of quality as opposed to the category of substance.

καὶ, explanatory. κατὰ τὸν λόγον, "in virtue of its form," "on the formal side." With this adverbial use of the phrase cf. 412 b 10 sq., where it is an attribute of οὐσία. The terms λόγος and εἶδος are equivalent (see first note on 403 b 2), but the former gives prominence to the notion or character, that which the definition seeks to express in words. The whole sentence merely expands a 18 sq. "receptive of the form without the matter." As the soul itself is the formal essence of the animal (οὐσία ἡ κατὰ τὸν λόγον), i.e. the form without the matter, so the sensible acts on sense in virtue of its form alone to the exclusion of its matter. πρῶτον. For this expression cf. 422 b 22, note. Here, however, it is decidedly preferable to understand πρῶτον in the same way, e.g., as 412 a 27, b 5 ἐντελέχεια ἡ πρώτη. We have gone through the several senses and found various parts of the body employed as sense-organs. The common characteristic of them all is that in them the sensory faculty resides. Thus seeing resides in the pupil of the eye 412 b 20 sq., and so on. This is a provisional view, which will require to be modified when we consider *sensus communis*. There seems no ground for introducing at this stage τὸ κοινὸν αἰσθητήριον, "the organ of this *sensus communis*," that which is at the back of the several senses (for which see 426 b 12—427 a 16), as is done by some commentators, e.g. M. Rodier: "Le sensorium premier est celui dans lequel réside cette faculté (la sensibilité en général)."

a 25. ἡ τοιαύτη δύναμις. The power, or capacity, to apprehend the form without the matter, as above explained. ἔστι μὲν οὖν, int. τὸ αἰσθητήριον καὶ ἡ δύναμις. Thus Them. 78, 14 H., 143, 8 sqq. Sp. καὶ τῷ μὲν ὑποκειμένῳ ταῦτόν ἢ τε αἴσθησις καὶ τὸ αἰσθητήριον...τὸ δὲ εἶναι ἕτερον τοῦ τε ὄργάνου καὶ τῆς δυνάμεως. τὸ δ' εἶναι ἕτερον. A. wants to say that the sense-faculty and the sense-organ are inseparable: you cannot have one without the other. Without the faculty the dead organ is a mere δμῶνυμον or δμῶνύμως λεγόμενον, so called by courtesy (cf. 412 b 14, 21, *Metaph.* 1035 b 14—18, 22—25, 1036 b 28—32, *Pol.* 1253 a 21). But they are essentially different; the one is an organ, the other a faculty, the one has magnitude, the other is unextended; the sense is a δύναμις connected with the organ, ὑπάρχουσα ἐν τῷ αἰσθητήρῳ ἢ αἰσθητήριον, 426 b 9. The organ and its faculty are one and the same, but we can separate the two in thought. If we look at the organ (τὸ αἰσθανόμενον) as a concrete thing and take account of its matter, it is an extended magnitude: if we abstract from the matter and attend only to the form, it is a power or faculty residing in this extended magnitude, but itself unextended and immaterial. That which each of these two aspects *is* can be expressed by τὸ εἶναι: the aspects are different; the act of thinking is different for each of them; as the notion whereby we think each aspect is different, so the definition which expresses this notion in words is different. Sometimes A. will prefer to say that two things are ἕτερα (or οὐ ταῦτόν) τῷ εἶναι, τῇ νοήσει, τῷ λόγῳ: sometimes, as here, he says that in the two cases τὸ εἶναι ἕτερόν ἐστιν. The aspect or εἶναι of the one is not the aspect or the εἶναι of the other. Organ and faculty, like uphill and downhill, are logically distinct. Their mutual implication appears in such phrases as "poor sight," "a good ear," "a delicate touch."

a 26. ἂν τι εἴη. The mode of expression with ἂν and the optative implies no sort of doubt in this conclusion, the suppressed protasis being "if the foregoing is true." In fact the potential optative here approximates in meaning to the indicative (Goodwin, *M. and T.* § 238; cf. Gildersleeve 442) and the ancient commentators paraphrase by ἐστὶ: Them. (78, 17 H., 143, 12 Sp.) τὸ μὲν γὰρ ὄργανον μέγεθος τι καὶ σῶμά ἐστιν: Simpl. (167, 31) τὸ μὲν γὰρ ἀμέριστον, ἡ δὲ ἀνειλιγμένη ἐστὶν οὐσία. Cf. Philop. 438, 30 sqq. See notes on 403 a 9,

421 b 20. τὸ αἰσθανόμενον. What is said is equally true of the whole perceptive organism and of the particular organ. τό γε αἰσθητικῶ εἶναι. Cf. 408 a 25, *note*, 413 b 29 sq., 429 b 10 sqq.

a 28. ἐκείνου, int. τοῦ αἰσθανομένου. Receptivity in the abstract is an immaterial form. Such a form is properly called a λόγος because it alone can be rationally defined or (in other words) is the content of the definition, cf. 424 a 24 κατὰ τὸν λόγον. Again, it is a δύναμις because it represents what a thing is good for, or is able to effect or be. Thus musical or medical skill "determines" the musician or physician, making him what he is: *Pol.* 1253 a 23 πάντα δὲ τῷ ἔργῳ ὁρίζεται καὶ τῇ δυνάμει. For the combination of λόγος and δύναμις, the character and capacity, cf. *De Gen. An.* II. 1, 731 b 19 τίς ἡ δύναμις καὶ ὁ λόγος τῆς οὐσίας [int. τοῦ θήλεος καὶ τοῦ ἄρρενος], and for δύναμις as equivalent to form cf. *Pol.* 1323 b 33 ἀνδρία δὲ πόλεως καὶ δικαιοσύνη καὶ φρόνησις τὴν αὐτὴν ἔχει δύναμιν καὶ μορφήν, and *De Gen. et Corr.* I. 5, 322 a 28 τοῦτο δὲ τὸ εἶδος ἄνευ ὕλης, οἷον αἰὼλος δύναμις τις ἐν ὕλῃ ἐστίν.

424 a 28—b 18. If the sense-organ is too violently affected from without, its constituent form, that is to say, its capacity to perceive, is destroyed. The reason for this will be evident from the foregoing [§ 3]. Again, the absence of sensibility in plants, in spite of their having a vital principle and being acted upon by tangible objects, is due to the fact that they have not in them any capacity of receiving the forms only, apart from the matter, of sensibles [§ 4]. Further, a question arises: In the absence of perceptive faculty, can the sensible quality, e.g. odour, produce any effect short of perception? Apparently not: the effect, e.g., of odour is either smelling or nothing at all. Besides, it is the medium or vehicle of the sensible quality, and not the sensible quality itself, which directly affects bodies [§ 5]. But the objects of touch and taste do produce effects apart from perception. Why not, then, it may be urged, the objects of the other senses? What, e.g., is smelling except being acted upon by odour? To this we reply: Smelling involves sentience; the air, acted upon by odour, becomes not sentient, but sensible [§ 6].

424 a 28 φανερόν δ'...29 τὰ αἰσθητήρια. This well-known maxim became stereotyped amongst the scholastics as *excellens sensibile corrumpit sensum*, or *sensibilium excellentia corrumpit sensum*. Cf. 422 a 21 ἐπὶ τοῦ λίαν λαμπροῦ (καὶ γὰρ τοῦτο ἄρατον). Dante is fond of bringing in this fact, *Purgatorio* 8, 36 Ma nelle facce l'occhio si smarrì, | Come virtù, ch' a troppo si confonda, where virtù=ἀρετὴ of the faculty: A. says the λόγος or δύναμις is spoiled, and the organ when it can no longer function has to all intents and purposes ceased to be an organ. See *note* on 422 a 31, and cf. *supra* 421 b 23, 422 a 29—33, 424 a 14, 15, also 426 a 30—b 7, 429 a 29—b 3.

a 30. ἡ κίνησις. Clearly the corporeal change in the corporeal organ. It is attended either by no perception at all, or by a painful effort and failure to perceive accurately. Cf. 426 b 7 λυπεῖ ἢ φθείρει, 429 a 31—b 3. λύεται ὁ λόγος. We are tempted to understand by λόγος the quantitative proportion in which materials are compounded in the sense-organ, the κρᾶσις or ἁρμονία τῶν μειχθέντων of 407 b 32 sq., see *note* on 424 a 4, μεσότητος. But it seems probable that even here the word bears the same meaning as in the previous section, namely "character" or "form," which the quantitative proportion may, however, be regarded as conditioning.

a 31. τοῦτο δ', int. ὁ λόγος, τὸ αἰσθητικῶ εἶναι, a 27, 28 *supra*. ἦν. Cf. 424 a 11. ὥσπερ καὶ ἡ συμφωνία καὶ ὁ τόνος, int. λύνονται: συμφωνία is the blending of two or more sounds or notes, which may form either a chord or an unison in octaves. Cf. *Metaph.* 1043 a 10 συμφωνία δὲ ὀξείας καὶ βαρέας μίξις



τοιαδί. But the notes which are capable of being so blended into one are determined by numerical proportion, λόγος ἀριθμῶν, and ultimately by number itself: *Anal. Post.* II. 2, 90 a 18 sqq., *Phys.* II. 3, 195 a 29 sqq., *De Sensu* 3 439 b 31 sq. (ἐν ἀριθμοῖς εὐλογίστοις). Thus the ratio of the double, 2 : 1, determines the octave, that of the ἡμιόλιον, 3 : 2, determines the fifth and that of ἐπίτριτον, 4 : 3, determines the fourth. Jan has collected the relevant passages of Aristotle in *Musici Scriptores*, De Consonantia, pp. 18—22; cf. *ib.* pp. 84—111 from *Problems* XIX.

a 32. ὁ τόνος, "the tension" (of the string) and so the pitch of the note produced by it. Cf. *Physiogn.* 2, 807 a 16 τὸν τε τόνον ἀνίησι καὶ βαρὺ φθέγγεται. The effect of striking the lyre too violently is that the strings get out of tune and what should be a harmonious chord becomes a discord. The two strings, e.g., that should emit a perfect fifth produce notes which refuse to blend in concord. καὶ διὰ τί ποτε... 33 οὐκ αἰσθάνεται. Cf. 411 b 28, 415 a 1 sqq.

a 33. μόριον ψυχικόν, namely the vegetative or nutritive principle, soul or faculty. Cf. 414 a 32 ὑπάρχει δὲ τοῖς μὲν φυτοῖς τὸ θρεπτικὸν μόνον. Cf. also 411 b 27 sqq., 434 a 22—26.

a 34. πάσχοντά τι: ψιλὰ τὰ εἶδη δέχεσθαι, Them. 78, 32 H., 144, 4 Sp. We have the clearest evidence that tangibles, if not other sensible objects, act upon plants. The question whether the plant can see or hear is not so likely to arise. Plants are acted upon, or affected, but not (like animals) in such a manner as to take the form of objects without the matter.

424 b 1. τὸ μὴ ἔχειν μεσότητα. Heat is in no part of the plant so tempered as to be in respect of temperature and humidity, like the flesh in animals, intermediate between any two degrees of these qualities presented by tangible objects. The simple organs of plants are incapable of discriminating the differences of the sensible qualities in objects. See 412 b 1 sqq., 411 b 23. This illustrates the importance of μέσον or μεσότης to A. Plato's term μέτριον in *Philebus* and *Politicus* is more appropriate. See Prof. J. A. Stewart on *Eth. Nic.* 1106 b 8—16, *Notes on Nic. Ethics* I. p. 196 sq.

b 3. πάσχειν μετὰ τῆς ὕλης, i.e. "at the same time as they receive the form of anything, they receive the matter likewise" (Wallace). As Them. says (78, 36 H., 144, 10 Sp.) πάσχει οὖν συνεισιούσης τῆς ὕλης τῆς τοῦ ποιούντος. They are affected by tangibles in the same way as they absorb nutriment. The plants cannot be warmed or cooled unless material vapour or moisture enters them, let us say, by the pores, in the very way in which Empedocles and Democritus supposed sensation to take place in animals. But such an explanation of sentience or sensation A. has left far behind, as modern botany has superseded his own crude view of the physiology of plants. Philop., while mentioning the view taken above, inclines to a different view which interprets μετὰ τῆς ὕλης by κατὰ τὴν ἰδίαν ὕλην πάσχειν τρεπομένην καὶ μεταβάλλουσαν, in the plant's own matter, ἰλικῶς καὶ σωματικῶς. The plant's own matter then is modified by contact with heat and cold, the sensible qualities get so far and penetrate no further: (440, 23) ἡ γὰρ ὑποκειμένη αὐτοῖς ὕλη ὑπὸ τῶν αἰσθητῶν πάσχουσα ἐν ἑαυτῇ δέχεται τὰ πάθη τῶν αἰσθητῶν, ὕλη αὐτῶν γινομένη καὶ ὥς ὕλη αὐτὰ δεχομένη εἰς ἑαυτήν, ὥσει καὶ ἄψυχος ἦν. But we cannot overlook the marked contrast to 424 a 18, ἀνευ τῆς ὕλης, nor does anything A. says justify us in assimilating what takes place in plants to the case where τὸ πάσχον, as well as τὸ ποιούν, is lifeless.

b 3. ἀπορ' ὅτι δ' ἄν. The gist of the following discussion comes out more clearly in the paraphrase of Them. (79, 13 sqq. H., 145, 1 sqq. Sp.) than in the text of A. itself. The question seems to be suggested by the case of plants.

Granted that plants do not smell and do not see, are they, then, wholly un-influenced by odour or by colour? The influence of light on the growth of plants is notorious. Does a noxious smell really do you any harm? A.'s contention is that the smell does you no harm. There may be something else noxious. The smell is a sort of danger signal. This corrects the too brief and summary statement of 421 b 23, which, however, applied to animals only (cf. 424 b 8 τῶν δυνατῶν).

b 6. εἴ τι ποιεῖ. Whatever effect odour produces consists in smelling and in nothing else. In the εἴ clause, the verb ποιεῖ has its general signification (*si quid agit*), in the apodosis its special signification (*efficit*). See note on 424 a 2 ποιούτων. One of the conditions for the mutual interaction of bodies, ποιεῖν τι and πάσχειν τι, is that they should be in contact, either directly or through a medium. Cf. 424 b 12. τὴν ὁσφρησιν ἢ ὁσμήν ποιεῖ. The same argument is used 421 b 21—23.

b 8. ὁ δ' αὐτὸς...τῶν ἄλλων. This sentence is parenthetic. οὐδὲ τῶν δυνατῶν, int. αἰσθάνεσθαι. From the particular sense of smell A. has passed to the case of sensation generally. Anything capable of sensation cannot be acted upon by a sensible object unless it possesses the particular sense which that object can stimulate. An animal with no other sense than that of touch cannot see, hear or smell: colours, sounds and odours fail to act upon it.

b 9. καὶ οὕτως, i.e. by the following argument.

b 11. ἐν οἷς ἐστίν. The relative clause is used as in 408 a 32, b 23 and implies ἐκεῖνα ἐν οἷς τὸ φῶς καὶ σκότος καὶ ὁ ψόφος καὶ ἡ ὁσμή εἰσιν, "the things which contain light, dark, sound or smell." Cf. ἔχει ψόφον, 419 b 6 sq.: sound and smell are attributes of bodies, and so is τὸ διαφανές (418 b 6 sq.), which is actually light, when it is not actually darkness. Cf. Philop. 442, 20 οὐχ ὑπὸ τῆς βροντῆς, ἢ ἀκουστόν, πάσχει τὰ ῥηγνύμενα ὑπ' αὐτῆς σώματα, ἀλλ' ὑπὸ τοῦ ἀέρος τοῦ ψοφοῦντος κινουμένου βιαίως πλησσομένα δίσταται...οὐχ ὑπὸ τοῦ ψόφου, ἢ ψόφος ἐστὶ καὶ ἀκουστός. The difficulty arises from a failure to distinguish between the object of the sense and the thing in which it resides, between the thing itself and its visible (or audible or odorous) quality. Simpl. would seem to have taken φῶς as equivalent to colour: (170, 16) ὥς εἰ τὸ κεχρωσμένον...εἰς τὸ κάτω συνωθίῃ, οὐ κατὰ τὸ χρῶμα δηλαδὴ, ἀλλὰ κατὰ τὴν βαρύτητα. Cf. 435 b 7—12.

b 12. ἀλλὰ. A. foresees an objection to this effect: "If tangibles admittedly act upon bodies, how about the objects of the other senses?" He answers: "If we take the same view of these other sensibles, we shall confuse 'having a smell' with 'having a sense of smell.'" The passage is not very clear, but A. insists upon making the theory apply uniformly to all the special sensibles alike. I conceive the objection introduced at b 12 ἀλλὰ to be developed as far as b 14 κἀκεῖνα ἐμποιεῖ and A.'s first answer to extend from b 14 ἢ οὐ πᾶν σῶμα to b 16 παθῶν τι. He has then admitted πάσχειν τι and asks whether this does not carry with it αἰσθάνεσθαι, while the concluding sentence b 17 ἢ τὸ μὲν ὁσμᾶσθαι κτέ. finally disposes of the objection.

b 12. οἱ χυμοί. The effects of brine (salt water) or of acid upon vegetables and many minerals are instances. But, as Them. points out, the effect in these cases is due not to the "taste" of these juices (χυμοί)—acids, alkalis or salts—but to their intrinsic qualities (79, 19 sq. H., 145, 11 sq. Sp.). εἰ γὰρ μή. How can the palpable facts of change and modification in inanimate things be explained except by assuming that these inanimate objects are acted upon by other tangible things?

b 14. ἀρ' οὖν. "Shall we then say that the objects of the other senses produce modification in things?" It seems at first sight doubtful whether this

expresses A.'s own view. *κάκεινα*, i.e. the objects of the other three senses also, things visible, things resonant and things odorous. *ἥ οὐ κτεῖ*. We should naturally expect a clause commencing with *ἥ* to introduce the solution provided by the author. A. may be supposed to put his reply in the form of a question: "Will odour and sound, therefore, also produce modification in inanimate things? or is it the fact that only some things can be acted upon by odour and sound, while others cannot?"

b 15. *καὶ τὰ πάσχοντα ἀόριστα, καὶ οὐ μένει*. "And the bodies which are susceptible are indeterminate and shifting and do not permanently remain what in quality they are made by the odour, sound etc." Cf. the Heraclitean dictum *πάντα ῥεῖ καὶ οὐδὲν μένει*. *οἶον ἀήρ· ὅξει γὰρ*. The *γὰρ* explains why air is an instance. It "has scent"—is perfumed—from having been (just) acted upon.

b 16. *τί οὖν*. What, then, it may be said, is "smelling" beyond just this being acted upon? How, that is, does smelling differ from being affected, or acted upon, by odours?

b 17. *πάσχειν τι*. Here *τι* must be accusative, following so closely upon *παθών τι*, b 16. Cf. *notes* on 410 a 25, 424 a 1.

b 17. *ἥ* introduces A.'s final solution. The difference is that smelling involves perception (literally "is also perception"), whereas air, after being acted upon, does not perceive, but on the contrary is itself actually perceived. Cf. 421 b 21 *εἴπερ τῆς ὁσμῆς αἰσθάνεται*.

b 18. *ταχέως*. The suggestion seems to be that, if odour or sound, acting on the air, quickly makes it odorous or sonorous, it will as rapidly lose these acquired properties. They "quickly come and quickly go": cf. *supra* b 15 *οὐ μένει*. † In *De Sensu*, c. 6, odour and sound, the objects of smell and hearing, are said to be propagated gradually and to travel through the medium, reaching one percipient who is nearer sooner than one who is distant. *αἰσθητὸς γίνεται*. The net result, then, of the discussion, 424 b 3 sqq., is to make it very clear that, while we may say *αἰσθάνεσθαι* is *πάσχειν τι*, it is not invariably true that *πάσχειν τι* is *αἰσθάνεσθαι*. Air and water are the two great instances of *πάσχοντα* which are not *αἰσθανόμενα*.

### BOOK III. CHAPTER I.

This chapter is closely connected with the preceding. In fact, it would have been better to begin Book III. at c. 3, or even, as Zabarella appears to have done, at c. 4.

**424 b 22—425 a 13.** The five senses discussed in the previous book are all that there are. This may be proved as follows: [premising that sensation is either direct, like touch, or indirect through a medium, like sight or hearing, we go on to state that] (1) All the tangible properties of objects are apprehended by touch, a sense which we possess. (2) As regards sight, hearing and smell, in which perception is through a medium, if the sense is wanting, it is because the sense-organ is wanting [this is so because animals, as such, possess the sensitive faculty which, given the appropriate organ, ensures every form of actual perception] [§ 1]. (3) Sense-organs are composed of the same elements as the corresponding media. (4) One and the same element may be the condition of our perceiving more than one kind of sensible: thus air is the medium of both colour and sound. And, if the same sensible can be perceived through the medium of more than one of the elements, as colour either through transparent air or through transparent water, either one of these two elements will serve to constitute the sense-organ [§ 2]. (5) Among the elements, however, two only, viz. air and water, are fitted to form sense-organs [§ 3]. (6) Now sense-organs thus constituted, i.e. of air, water or both, are actually possessed by animals. [The sense-organ need not be wholly composed of the element essential to perception.] The inference from all this is that all possible means of sense-perception are possessed by animals, unless they be mutilated or not fully developed [§ 4].

It has been doubted whether the foregoing argument is an induction or a demonstration. In the *History of Animals* (iv. 8, 532 b 29), where the same question is treated, A. appeals to experience: *περὶ δὲ τῶν αἰσθήσεων νῦν λεκτέον· οὐ γὰρ ὁμοίως πᾶσιν ὑπάρχουσιν, ἀλλὰ τοῖς μὲν πᾶσαι τοῖς δ' ἐλάττους. εἰσὶ δ' αἱ πλείους, καὶ παρ' ὧς οὐδεμία φαίνεται ἰδὺς ἑτέρα, πέντε τὸν ἀριθμὸν κτέ.* Cf. *De Sensu* 5, 444 b 19. But we hold with Alexander and Simplicius that the reasoning here is deductive. Cf. Alex. Aphr., *ἀπ. καὶ λύσ.* III. 6, p. 90, 3 sqq., *De An.* 66, 3 sqq., Simpl. 173, 32 sq., 175, 34 sqq., 178, 36 sqq. Hegel is credited with having demonstrated, the very year in which the first asteroid was discovered, that seven must be the number of the planets. Aristotle, too, may well have thought that the plain fact of experience, "there are five senses and no more," would be none the worse for being strongly fortified by argument. It goes without saying that the premisses of his hypothetical syllogisms are neither logically prior to nor better known than the fact they are supposed to establish. However, a different complexion will be put upon this dialectical feat if we accept the suggestion that it is directed against a supposed fanciful tenet of Democritus who, according to late authorities, maintained that some animals have senses which are lacking to man and that the number of *αἰσθήσεις* is

greater than the number of αἰσθητά, so great indeed that they escape observation. The point is obscure, but, if any preceding philosopher indulged in such speculations as Stobaeus fathers upon Democritus, it would be not unnatural for A. to oppose them, not merely by the common-sense statement that things are what they are, but by an attempt to prove that they must be so and cannot be otherwise. See Aet., *Plac.* IV. 10, 4, 5 (*Doxogr. Gr.* p. 399, 15) πλείους εἶναι αἰσθήσεις, περὶ τὰ ἄλογα ζῶα καὶ περὶ τοὺς σοφοὺς καὶ περὶ τοὺς θεοὺς, and again *ib.* 399. 19 Δ. πλείους μὲν εἶναι τὰς αἰσθήσεις τῶν αἰσθητῶν, τῷ δὲ μὴ ἰσχυρίζεσθαι τὰ αἰσθητὰ τῷ πλήθει λανθάνειν, Lucret. IV. 794—803, Krische, *Forschungen* 154, Zeller, *Phil. d. Gr.* I.<sup>6</sup> 912, *nn.* 1, 2, Natorp, *Forschungen* 177, *n.* (cf. *Archiv f. Gesch. d. Phil.* I. 350 sqq.), Siebeck, *Gesch. der Psych.* I. 114, *n.* 2, Diels, *Vorsokr.* p. 388, Beare 206 sq. It is assumed throughout that fire, air, earth and water are the only “elements” in our region of the physical universe: hence the qualification in 425 a 11 “provided there exist no unknown body with unknown properties.” This caution would safeguard the argument in the event, however improbable A. may have considered it, of the discovery of new forces in nature and new senses in living things correlative to them.

424 b 24. εἰ γὰρ. Here begins the first of six clauses of a complex protasis, followed at length in 425 a 9 by an apodosis πᾶσαι ἄρα κτέ. Bonitz, to whom the elucidation of the construction is due, paraphrases the first clause as follows: εἰ γὰρ καὶ νῦν αἰσθησιν τούτων πάντων ἔχομεν ὧν ἡ αἴσθησις ἀφή γίγνεται. Madvig questioned this punctuation, proposing in its place εἰ γὰρ παντός, οὐ ἐστὶν αἴσθησις, ἀφή, καὶ νῦν αἰσθησιν ἔχομεν κτέ. in order to make out that ἀφή is involved in all the senses. But touch is here discriminated from the senses which have separable media, the flesh—as explained in II., c. 11—being an inseparable medium of touch. καὶ νῦν, “as it is,” “constituted as we are.” In these words there is a suggestion of a difference between the natural and the possible. See 425 a 9.

b 25. πάντα γὰρ. This is the first of many parentheses which complicate and retard the course of the argument. The statement seems to differ from the premiss, which it purports to prove, by the careful qualification of τὰ τοῦ ἀπτοῦ ...πάθη by ἡ ἀπτόν (int. τὸ ἀπτόν ἐστίν).

b 26. ἀνάγκη τ'. This is the second premiss. ἐκλείπει. For this use of the word cf. *Anal. Post.* I. 18, 81 a 38 φανερόν δὲ καὶ ὅτι, εἴ τις αἴσθησις ἐκλείπειν, ἀνάγκη καὶ ἐπιστήμην τινα ἐκκλειομένην.

b 27 ὅσων μὲν... 29 ὅσα δὲ. The stress is on the second of the antithetical clauses, which introduces objects of “mediate” perception and so constitutes the third premiss, the μὲν clause merely rehearsing the contents of the first premiss.

b 28. αὐτῶν ἀπτόμενοι. Here and in b 29 μὴ αὐτῶν ἀπτ. we must understand τῶν αἰσθητῶν. In this passage A. even goes so far as to speak of the two senses which work through an inseparable medium as working by immediate contact. This is inexactly stated, but there is no uncertainty as to A.'s real position. We perceive tangibles “by direct contact” only in the sense that we are proprietors of the medium, while of air and water we are not proprietors. The inexact statement of the text, in fact, returns to the popular view which had been corrected in II., c. 11. See 426 b 16, 435 a 17 and *noie* on 423 b 11. The phrase also recurs *De Sensu* 7, 449 a 24 καὶ ὅσων μὴ αὐτῶν ἀπτόμενοι αἰσθάνονται.

b 29. διὰ τῶν μεταξὺ, “through media,” i.e. through separable media, for A. adds his own explanation in the words λέγω δ' οἷον ἀέρι καὶ ὕδατι in 424 b 30.

b 30. τοῖς ἀπτοῖς, int. αἰσθανόμεθα. The words practically repeat διὰ τῶν μεταξὺ, defining it a little more closely.

b 31. ἔχει δ' οὕτως, ὥστε. The clause with ὥστε, a clause of actual result, expresses how the case stands: "if on the one hand...then it is necessary (b 32 ἀνάγκη ἐστὶ) that...; if on the other...then the possessor of either of these will perceive (425 a 2 καὶ ὁ τὸ ἕτερον...αἰσθήσεται κτέ.)." It will be seen that ἔχει δ' οὕτως ὥστε is merely a variant on the more common συμβαίνει ὥστε and might be translated "this being so, it follows that." ἕτερα...32 τῷ γένει, "generically different," as colours, odours and sounds, μὴ ὁμογενῇ (431 a 24). The test of identity or difference of sensibles as given in *De Sensu* 7, 447 b 21—26 is that the object is numerically one, provided it be perceived in the same instantaneous act: it is specifically one and the same, if perceived by the same sense and in the same manner.

b 32. τὸ τοιοῦτον, i.e. corresponding to the medium.

b 34. ἔστιν ὁ ἀήρ καὶ ψόφου καὶ χροᾶς, "the air is related to, stands in relation with, both sound and colour." Cf. 418 a 12, *note*. As being diaphanous, air is the medium of colour, while, as διηχῆς, it is the medium for sound. εἰ δὲ πλείω, i.e. if there be more media than one.

425 a 1. τοῦ αὐτοῦ, int. αἰσθητοῦ ἐστίν. οἷον χροᾶς καὶ ἀήρ καὶ ὕδωρ, "for example, both air and water are media of colour."

a 2. καὶ ὁ τὸ ἕτερον, even the percipient who has but one of the two. Of the two media only one is available for him. τοῦ δι' ἀμφοῖν, int. αἰσθητοῦ, the object that is capable of being perceived through both media, air and water.

a 3. τῶν δὲ ἀπλῶν. Partitive genitive depending on δύο τοῦτων, with which μόνον goes closely: "it is from these two alone of the simple bodies that etc." αἰσθητήρια. From this point onward it must be noted that A. uses the word in a narrower sense for the organs of the telepathic senses, sight, hearing and smell, as distinguished from touch, which, in conformity with the popular opinion, he considers to be effected by direct contact. See Beare, p. 245, also *note* on 424 b 28 *supra*. For another instance of αἰσθητήριον in this narrower sense see 435 a 15 and *note*.

a 4. ἡ μὲν γὰρ κόρη. Cf. *De Sensu* 2, 438 b 16 ὥστ' εἴπερ τοῦτων τι συμβαίνει, καθάπερ λέγομεν, φανερόν ὡς εἰ δέ τοῦτον τὸν τρόπον ἀποδιδόναι καὶ προσάπτειν ἕκαστον τῶν αἰσθητηρίων ἐνὶ τῶν στοιχείων, τοῦ μὲν ὀφθαλμοῦ τὸ ὁρατικὸν ὕδατος ὑποληπτέον, ἀέρος δὲ τὸ τῶν ψόφων αἰσθητικόν, πυρὸς δὲ τὴν ὄσφρησιν. This passage agrees with *De A.* as to the eye and the ear. It differs as to the organ of smelling, because the object of smell, which the organ is potentially, is differently conceived, viz. as καπνώδης ἀναθυμίασις, whereas it was ξηρὸν 422 a 6, as it is ἔγχυμον ξηρὸν in *De Sensu*, c. 5. This discrepancy in respect of the organ of smell has led some to think that it is not his own view which A. is there expounding. See Baeumker, *Arist. Lehre v. d. äussern und innern Sinnesvermögen*, pp. 30 sq., 47, n. 4, Zeller, *Aristotle*, II. p. 62, n. 3, E.T.: cf. Alex. Aphr., ad *De Sensu* 37, 7 sqq., 38, 12 sqq. W. But A. may have subsequently modified an earlier view as to the composition of the organ of smell. See Prof. Beare, p. 148, n. 5, p. 155 and Mr G. R. T. Ross ad loc. The former suggests (p. 155) that cc. 2 and 5 of *De Sensu* may have been written at a considerable interval of time from each other and (p. 282) that c. 7 of the same work was "perhaps chronologically Aristotle's first essay on the subject of simultaneous perception of different sensibles," i.e. earlier than *De A.* III., c. 2. "The *de Sensu* seems to contain," he says, p. 244, *note*, "preliminary essays on certain subjects of the larger work *de Anima*, which may therefore (notwithstanding many references, e.g. 436 a 1 sqq.) be regarded as possibly later." In plan and intention *De A.* certainly came before the *Parva Naturalia*, as is fully borne out by the anticipations and cross-references. But doubtless these courses of lectures

were several times repeated with additions and modifications,\* so that some things in the subsidiary lectures may be chronologically earlier than some things in the principal course, the *De A.* as we now have it.

a 4 ἡ δ' ἀκοή...5 ὁσφρησις. Here, as above 419 a 13, 423 b 19, the term properly denoting the operation of a sense is used to denote the corresponding organ. For ὁσφρησις used of the organ cf. *De Sensu* 2, 438 b 20 πρὸς δὲ τὴν ὁσφρησιν, cited in the last note. Cf. also *De Gen. An.* II. 6, 744 a 2 ἡ δ' ὁσφρησις καὶ ἡ ἀκοή πόροι συνάπτοντες πρὸς τὸν ἀέρα τὸν θύραθεν, πληρεῖς συμφύτου πνεύματος, 425 a 7 ἐν τῇ ἀφῇ.

a 5. θατέρου, "of one or other" of these, viz. of water in the case of water-animals, of air in the case of land-animals. τὸ δὲ πῦρ ἢ οὐθενός, int. αἰσθητικοῦ. Fire is related to, is the medium of, no sense-faculty. As the medium is between the percipient faculty and the perceived object, it may be described as related to either; and the context, οὐθέν γὰρ ἄνευ θερμότητος αἰσθητικόν, shows that here the reference is to the percipient. The same remark applies to a 6 γῆ. Cf. 435 a 11—24.

a 7. ἐν τῇ ἀφῇ. Cf. *De Sensu* 2, 438 b 30 τὸ δ' ἀπτικὸν γῆς [int. ἐστίν]. μάλιστα, more than in any other perceptive organ or part. ἰδίως qualifies μέμικται. The presence of earth in the organ is essential to its performance of its function. It has to perceive all tangible qualities, of which the properties belonging to earth are some of the most important. Cf. 435 a 22 sq. The presence of fire ensures that the remaining tangibles are perceptible. διὸ λείπεται ἄν. This means that, if we take away air and water, there is nothing left of which to make a sense-organ. Fire will not do, earth will not do, and we have already organs into whose composition air and water enter.

a 8. ταῦτα δὲ, i.e. the sense-organs, αἰσθητήρια, constituted of air and water.

a 9. καὶ νῦν, "as it is," "even within our experience." Cf. 424 b 24, 425 a 22, b 9. ζῆνα. From *Hist. An.* IV. 8, 532 b 33 we know that this includes all viviparous animals: ἄνθρωπος μὲν οὖν καὶ τὰ ζωοτόκα καὶ πεζά, πρὸς δὲ τοῦτοις καὶ ὅσα ἐναίμα καὶ ζωοτόκα, πάντα φαίνεται ἔχοντα ταύτας πάσας. πᾶσαι ἔρα. Here at last is the conclusion drawn from the unwieldy series of premisses which began with εἰ γὰρ παντός (424 b 24).

a 10. ὑπὸ τῶν...πεπηρωμένων, i.e. by the aforesaid animals, viz. as we know, the vivipara, if fully developed and un mutilated. Cf. 415 a 27 note. φαίνεται γὰρ...11 ὀφθαλμούς. Another parenthesis. The mole is regarded by Aristotle as belonging to the πεπηρωμένα. In the *Hist. An.* loc. cit., Aristotle excepts the mole as "an entire class" which is "maimed" (533 a 2 πλὴν εἴ τι πεπήρωται γένος ἐν, οἷον τὸ τῶν ἀσπαλάκων).

a 12. ἕτερον, other than those known to us in experience. This is shown to be the meaning of ἕτερον by the words which qualify πάθος. καὶ πάθος. If there were an unknown "elemental" body distinct from the four, it would presumably have distinct and unknown properties. τῶν ἐνταῦθα, the bodies found in our world, the world of actual experience. So τὰ ἐνταῦθα is contrasted with τὰ ἐκεῖ in *Μεταφῆ.* 990 b 34 ταῦτα δ' ἐνταῦθα οὐσίαν σημαίνει καὶ ἐκεῖ (in the world of ideas).

a 13. οὐδεμία ἂν ἐκλείποι. This sentence corresponds to and is equivalent to the sentence οὐκ ἔστιν αἰσθησις ἑτέρα παρὰ τὰς πέντε, with which we started 424 b 22.

Having proved that there are five senses and no more, A. proceeds to make the first use of his conclusion by demonstrating that the κοινὰ are really what he called them, "common sensibles." He does this by proving that they are not the province of any special sense. There could be no sense and no sense-organ

outside the five which he has described, and no one of these five apprehends the *κοινὰ* as *ἴδια* or *κυρίως αἰσθητὰ* to it in particular. This is the first step towards developing his doctrine of *sensus communis* or *ἁλῆ αἰσθησις* in which the five special senses are merged and coalesce, for the *κοινὰ* are perceived *καθ' αὐτὰ* and, since it is none of the special senses that so perceives them, it must be this *sensus communis*.

**425 a 14—b 4.** Can there be a special sense which apprehends as its province the "common sensibles," all of which we perceive by movement? The common sensibles are motion, rest; size (extended magnitude), figure; number, unity. Of these number and unity are also apprehended by means of the objects of the special senses. [Aristotle decides in the negative.] There can be no special organ for the apprehension of these common sensibles, and therefore no separate special sense. If there were, our perception of the common sensibles by any of the five senses would be either (α) on a par with that indirect apprehension which in fact we have of one quality, e.g. sweetness, by the special sense, e.g. sight, which perceives another [§ 5]. This, viz. our apprehension of sweetness by sight, is due to the circumstance that we have a sense [*sensus communis*] which has both sensibles for its object, and whereby we take cognizance of their simultaneous presentment. Or (β), if not like the perception of sweetness by sight, our perception of the common sensibles would be purely incidental, as is our recognition of Cleon's son in the white object which we see [§ 6]. But of the common sensibles we have a perception to which all the senses contribute, direct not incidental, and therefore not confined to a special sense; not, that is, like our apprehension that it is Cleon's son that we see [which is confined to sight]. In our apprehension, above explained, of the objects of one special sense by another perception is in a manner incidental; when the special senses operate not as separate, but in so far as they meet in one. To recognise the co-existence of different qualities in the same object requires a common, and not a separate or special, sense [§ 7].

**425 a 14.** οὐδὲ τῶν κοινῶν. Having rejected the hypothesis of a sixth sense dealing with special sensibles, *ἴδια αἰσθητὰ*, of its own, A. has now to consider the question whether we should assume a separate organ, and therefore a separate sense, for the apprehension of τὰ κοινὰ. These *κοινὰ* have been already introduced in II., c. 6. Them. puts the case ingeniously: 81, 18 H., 149, 28 Sp. "it may be said that there ought to be a special organ for the common sensibles, but that this is lacking to man." αἰσθητήριον. If there is no separate sense-organ, it will follow (cf. the statement above 424 b 26 sq.) that there is no separate sense, and this is the conclusion drawn below: ὥστε δῆλον ὅτι 425 a 20.

**a 15.** ὧν ἐκάστη...κατὰ συμβεβηκός. Torstrik followed the old Latin version in inserting the negative οὐ before κατὰ συμβεβηκός: then, he thought, the relative sentence would consistently express A.'s own view as laid down in II., c. 6, where τὰ κοινὰ are said to be perceived καθ' αὐτά, i.e. οὐ κατὰ συμβεβηκός. Cf. 425 a 28. Others suppose that A. is not stating his own view but what would be the effect of the hypothesis of a sixth sense for the κοινὰ, which he is refuting (cf. Simpl. 182, 38—183, 4). In that case, besides perceiving the κοινὰ directly by this sixth sense, we should indirectly perceive them by every special sense. I am dissatisfied with both these explanations and believe (1) that the words express A.'s own belief about τὰ κοινὰ, not the consequences which would follow if there were a special sense-organ for them, and (2) that there is no need to insert the negative before κατὰ συμβεβηκός. In ordinary language we are said to perceive *things*, but the simplest psychological analysis shows that the proper objects of the special senses are qualities. A. adopts the convenient



assumption that the sensible thing may be regarded as a substratum, *ὑποκείμενον* or logical subject, with qualities, *πάθη*, which cannot exist apart from it, *οὐ χωριστά*. In II., c. 6 the special sensibles are qualities, colour, sound, odour etc., perceived directly by the special senses. The things or substances, *ὑποκείμενα*, in which the special sensibles inhere, are perceived *per accidens* and by the special senses. Thus Diares' son is seen *per accidens*. Of the *κοινὰ* we are told (a) that they are perceived directly, *καθ' αὐτά*; (b) that they are perceived by all the special senses, *κοινὰ πασῶν, κοινὰ πάσαις*; (c) that a certain movement is perceived both by touch and by sight. But it will be observed that A. does not say in II., c. 6 under (b) or (c) that the *κοινὰ* are *directly* perceived by the special senses. The brevity of his exposition might suggest this, but it would create a false impression: for in our present chapter (425 a 27 sq.) he states that we have a non-incidental, i.e. direct, perception of the *κοινὰ* and therefore, he argues, this common perception is not a special sense (*οὐκ ἄρ' ἐστὶν ἰδία, int. αἰσθησις*). Cf. *De Mem.* I, 450 a 9—14, which implies that magnitude, motion and time are *καθ' αὐτὰ αἰσθητὰ* of the *πρῶτον αἰσθητικόν*. The same view is implied in the expressions *κοινὰ πασῶν* and *κοινὰ πάσαις* of II., c. 6, as will be evident on reflection. The proper object of sight (neglecting for the moment light, darkness, fire and phosphorescence) is colour. But none of the *κοινὰ* is colour: therefore none of the *κοινὰ* is *directly* perceived by sight, none of them is *κυρίως αἰσθητόν, πρὸς δ' ἡ οὐσία πέφυκε τῆς ὀφθαλμοῦ, περὶ δ' μὴ ἐνδέχεται ἀπατηθῆναι*: and, we may add, though this has been disputed, (418 a 23) *οὐδὲν πάσχει ἢ τοιοῦτον ὑπὸ τῶν κοινῶν τινὸς ἢ ὄψις*, sight is not affected by any of the *κοινὰ* as such. Sight is not affected by magnitude as magnitude, by motion as motion, and so on, as it is affected by its *κυρίως αἰσθητόν*, or *ἴδιον*, colour. But (418 a 19 sq.) sight *is* affected by motion; we are led to the irresistible conclusion that a special sense is affected by a *κοινὸν per accidens*. Again, the argument by which A. concludes that Diares' son is *per accidens* an object seen will also apply to the *κοινὰ*. What the eye sees directly is colour, but the *πάθος*, colour, has for its logical subject the thing or substance, Diares' son. Directly the eye perceives the quality, indirectly it takes in the thing or substance to which the quality belongs. Now the case of the *κοινὰ*, though not quite on a par, is similar. If we take in the thing or substance *per accidens* by a special sense, we take in with the thing or substance its various attributes, even though these are not directly cognizable by that special sense. When we are aware of Diares' son, we are aware of motion, magnitude, number, shape, all of which are his attributes: they "go with" him or "accompany" him (425 b 5) *ἀκολουθοῦντα καὶ κοινὰ*, (b 8) *ἀκολουθεῖν ἀλλήλοις ἅμα χρῶμα καὶ μέγεθος*, (428 b 22) *τῶν κοινῶν καὶ ἐπομένων τοῖς συμβεβηκόσιν* [=the logical subjects], (b 23) *κίνησις καὶ μέγεθος, ἃ συμβέβηκε τοῖς αἰσθητοῖς*. In perceiving the things or substances, as we do, indirectly and incidentally by the special sense, we also perceive the attributes of these things or substances; and, so far as the perception is by the special sense, again indirectly and incidentally. Or rather, the content of sensation by any special sense is a confused whole, out of which that special sense itself cannot separate and abstract *τὰ κοινὰ*. To do so is the task of *sensus communis*, which in A.'s theory has usurped some of the purely intellectual functions assigned by Plato, *Theaet.* 185, 186, to the soul or mind.

a 15 *οἶον κινήσεως... 16 ἐνός*. For the list of *κοινὰ* see *supra* 418 a 17 and *notes*. In the present passage *ἐν* is added. The reason doubtless is that in the common view of Greek mathematicians *ἀριθμός* implies plurality (*Metaph.* 1088 a 6 *οὐκ ἔστι τὸ ἐν ἀριθμός*), and "one" or "unity" is not a number, but

rather a principle of number, *Μεταφῆ.* 1021 a 12 τὸ δ' ἐν τοῦ ἀριθμοῦ ἀρχὴ καὶ μέτρον. Cf. the phrase τὸ ἐν καὶ τοὺς ἀριθμούς, *Μεταφῆ.* 987 b 29.

a 17. *κινήσει αἰσθανόμεθα.* The Greek commentators understand this to mean "by the movement which the sensible sets up" in us or, more explicitly, in one or other of the sense-organs. Them. is rather vague, but (81, 30 H., 150, 17 Sp.) *κινεῖ τὸ αἰσθητήριον καὶ ἀλλοιοῖ καὶ ἐνδίδωσι τὴν ἰδίαν μορφήν*, though not expressly commenting on the words, points in this direction. Simpl. comments directly on the words thus: 183, 4 τῷ τὸ μὲν αἰσθητήριον ἢ πάσχειν τι ὑπὸ τοῦ αἰσθητοῦ...ἢ καὶ ἄνευ πάθους...τὴν ἐνέργειαν τοῦ αἰσθητοῦ δεχόμενον...(10) ὑπὸ μὲν οὖν τῶν κοινῶν κινεῖται καὶ πάσχει ἐκάστη αἴσθησις. More explicitly Philop. 457, 29 *κίνησιν δὲ λέγει τὸ πάθος, τὴν ἀλλοίωσιν· τὰ οὖν κοινὰ αἰσθητά, φησί, πάθος ποιεῖ.* Cf. Prisc. Lyd. (ed. Bywater) 21, 20 *δεῖ οὖν οὐχ οὕτω τῇ κινήσει λέγεσθαι γνωριστικούς ἡμᾶς εἶναι τῶν κοινῶν, ὡς προηγουμένως μὲν τῆς κινήσεως, κατὰ συμβεβηκὸς δὲ ἢ δευτέρως τῶν ἄλλων, ἀλλ' ὁμοίως μὲν πάντων τῶν κοινῶν, πάντως δὲ ἐπὶ πάντων τῇ κινήσει, τουτέστι τῷ ἀλλοιοῦσθαι, συναισθάνεσθαι.* If the words are so taken, our knowledge of the common sensibles is not said (by A.) to be due to motion in the sense that motion is primarily perceived and the other *κοινὰ* only in a secondary or indirect fashion through it; but they are all alike and in all objects perceived through modification in the percipient. But how then are the *κοινὰ* in any way different from the *ἴδια*? The explanation tendered to us applies equally to colour, sound, odour, flavour. In fact, our investigation of sense began with the common opinion that sensation is an *ἀλλοίωσις* and *πάθος*, wherever found; so that the addition of *κινήσει* adds nothing to *αἰσθανόμεθα*. It appears to me, then, that this interpretation cannot be accepted. But the alternative course is not without difficulty. If we retain *κινήσει*, we may understand by it the perception of external movement. Siebeck has argued that this brings a wrong conception into the whole passage. It is startling to find our perception of the other *κοινὰ* made to depend upon our perception of one of them, *κίνησις*: and no use is made of the deduction. There is no attempt elsewhere to deduce these conceptions from motion, and number is expressly said to be logically prior to motion. Still, the perception of motion might help us to perceive what is prior to motion; and time, a common sensible, which is altogether omitted in II., c. 6 and the present chapter, might truly be said to be perceived by the perception of motion. But in *Phys.* IV. 11, 219a 12 sqq. magnitude, motion and time are all instances of τὸ *συνεχές*, and the continuity of motion and of time are deduced from the continuity of magnitude: *διὰ γὰρ τὸ τὸ μέγεθος εἶναι συνεχές καὶ ἡ κίνησις ἐστὶ συνεχής, διὰ δὲ τὴν κίνησιν ὁ χρόνος· ὅση γὰρ ἡ κίνησις, τοσούτος καὶ ὁ χρόνος αἰεὶ δοκεῖ γεγονέναι.* The motion is continuous because the magnitude is continuous, but we should not know that the magnitude was continuous, unless the motion were so: and in that sense we may say *μέγεθος κινήσει*. Cf. *De Mem.* I, 450 a 9—14. On the whole it is not unlike A. to start a cognate investigation upon a very slight occasion. It would be reading the ideas of modern psychology into A. to interpret *κινήσει*, not of external movement as perceived, but of local movement of the percipient, especially movement of the eye and hand. Torström, in making his fine emendation *κοινῇ* for *κινήσει*, was misled as to Simpl. by the Aldine edition (see 184, 7 Hayduck). There can be no doubt that the text of Simpl. was *κινήσει*: cf. 183, 4, 30. If we accepted the emendation, the meaning of the passage would be rendered much simpler and more coherent and a good antithesis given to the *ἴδιαν* of a 21: "because we always perceive the common sensibles together, therefore there cannot be a special sense for any one of them, e.g. for motion." This is not in conflict with the following

statement, a 27, for *sensus communis* is not a special sense. The same end might be secured by inserting *κοινῇ* before *κινήσει*.

a 17. μέγεθος κινήσει. Simpl. understands μέγεθος to be apprehended by the amount or intensity of the impression produced on sense: (183, 17) *ὅτι γὰρ καὶ ὡς μέγεθος εἰς τὸ αἰσθητήριον δρᾷ τὸ αἰσθητόν, δηλοῖ ἢ ἀπὸ τῆς χιόνος ὡς λευκῆς τῇ ὕψει ἐγγυνομένη βλάβη τῆς ἐπὶ πολὺ ἐκτεταμένης πεδίου, ἀλλὰ καὶ ὁ ἐκ τοῦ μεγάλου πεισόντος λίθου μᾶλλον πλῆττων ἥχος*. Cf. *Categ.* 6, 5 b 6—8. Philop. mentions the same explanation (458, 19) *εἰ μὴ ἄρα εἴποισ ὅτι μέγεθος λέγει τὸ ἐν ἐκάστη αἰσθήσει καὶ οὐκ ἐν ποσῷ, οἷον μέγαν ψόφον ἢ μέγα λευκόν*. Cf. Plato, *Tim.* 67 B of sound *μεγάλην δὲ τὴν πολλήν* [int. *κίνησιν*], “if the movement is large, the sound is loud” (Archer-Hind). The connexion between spatial magnitude and motion as *perceptia* gives a far more satisfactory interpretation.

a 18. μέγεθος γὰρ τι τὸ σχῆμα. Philop. informs us (458, 23 sqq.) that an objection was raised (*φασί τινες*) on the ground that in *Categ.* 8, 10 a 11 *σχῆμα* is a *ποιόν*, while *Metaφh.* 1020 a 9 μέγεθος is a *ποσόν*. Cf. Simpl. 183, 22 sq. *κατὰ γὰρ τὸ ὑποκείμενον ὡς ὕλη τῷ μεγέθει χρώμενον, ὡς καὶ τὸ βάθρον ξύλον λέγομεν, ἐπεὶ ὑπὸ τὸ ποιόν πᾶν σχῆμα*. In the words of Philop. (458, 30), μέγεθος here means τὸ ἐσχηματισμένον, not τὸ σχῆμα. τῷ μὴ κινεῖσθαι. Rest is the cessation of motion, and the knowledge of contraries is one, 411 a 3 sq. Cf. τῇ ἀποφάσει 425 a 19; also ἡ στέρησις 430 b 20—23; also 422 a 23 ἀκοὴ καὶ σιγῆς, which must be the cessation of movement, if sound is movement. The Greek commentators, if consistent, must explain the perception of rest by the absence of an impression upon the sense. But Philop. (458, 31—36) is obliged to admit that it is the cessation of the motion in the external object which brings our internal πάθος to a halt. We do not cease to have a πάθος, but it does not change: τὰ ἰστάμενα ὁρῶμεν μήτε μειουμένου μήτε αὐξανόμενου τοῦ πάθους, διότι ἴστανται. He adds the shrewd observation τὰ δὲ κινούμενα ἄλλως καὶ ἄλλως ὁρῶμεν ἢ μειουμένου ἢ αὐξανόμενου τοῦ πάθους πρὸς τὴν κίνησιν αὐτῶν. Simpl. scouts the notion that it is by στέρησις of motion that rest is perceived: (183, 25) τὸ δὲ ἡρεμοῦν τῷ μὴ κινεῖσθαι φησιν, ἵνα σαφηνίσῃ, ὅπως εἴρηται τῇ κινήσει, ὅτι οὐχὶ τῷ αὐτὰ κινεῖσθαι. τὸ γοῦν ἡρεμοῦν οὐ κινούμενον ὁμως γνωρίζεται, ὡς αὐτὸ μὲν μὴ κινούμενον, κινούν δὲ καὶ αὐτὸ τὴν αἴσθησιν...προείρηται γὰρ ὡς πάντα κινήσει αἰσθανόμεθα, καὶ αὐτὴν τὴν στάσιν.

a 19. τῇ ἀποφάσει τοῦ συνεχοῦς. The perception of unity and number is analogous to that of motion and rest, the latter being in each case the contrary of the former. The ἐν of 425 a 16 is here represented by τὸ συνεχές. It is a concrete unit and the numbers which it would generate would also be concrete. A quantum, ποσόν, is said to be either continuous, like magnitude, or discrete, like number. καὶ τοῖς ἰδίῳ, int. αἰσθητοῖς γνωρίζεται. The verb to be supplied must, owing to the construction having been changed, be passive. Simpl. (184, 5—9) would not confine καὶ τοῖς ἰδίῳ to the case of number, but would make it apply to all the *κοινά*: at least, so I understand his suggestion that the words ought to be joined with a 17 πάντα κινήσει αἰσθανόμεθα. Such a huge parenthesis seems too much even for A.

a 20. ἐκάστη γὰρ ἐν. This shows how number can be said to be apprehended τοῖς ἰδίῳ, i.e. by or in the special sense-objects. Every one of the five senses apprehends unity, because each sensation is one: one colour, one sound etc., and number is a plurality of units, πλῆθος μονάδων. Thus unity is apprehended apart from extension. Cf. *De Sensu* 7, 447 b 21 sqq. After arguing that it is impossible to have two sensations simultaneously when they fall under the same sense, and still more impossible when they belong to two separate senses, A. then continues (b 24) φαίνεται γὰρ τὸ μὲν τῷ ἀριθμῷ ἐν ἡ ψυχῇ οὐδενί

ἐτέρῳ λέγειν ἀλλ' ἢ τῷ ᾅμα [int. αἰσθάνεσθαι], τὸ δὲ τῷ εἶδει ἐν τῇ κρινούσῃ αἰσθήσει καὶ τῷ τρόπῳ κτέ. The instantaneous single act implies the single object. Again, since there are a plurality of senses, the plurality of their objects similarly furnishes plurality apart from extension. The ἐν here (425 a 20) recalls, and has the same meaning as, the ἐνός of a 16. But, unless we postulate memory, the "hoarding sense," or a *sensus communis* capable of apprehending simultaneously more than a single object, it is difficult to see how successive single acts of sensation, however numerous, can be apprehended by mere sense as number. Cf. note on 424 b 31 ἐτέρα. ὥστε δῆλον. A., having shown how in his view the κοινὰ are perceived by means of each of the five senses κατὰ συμβεβηκός, now draws the conclusion that the common sensibles cannot be the proper province of any one of these senses; and he has already proved that there are only these five senses; therefore the common sensibles are not the exclusive province of any single special sense.

a 21. ὅτουοῦν...τούτων, "any one whatever of these common sensibles." The inference would be clearer if put the other way: no single one of the five or six κοινὰ belongs especially and exclusively to any special sense. οὕτω γὰρ ἔσται. Cf. 426 b 19 οὕτω μὲν γὰρ...δῆλον ἂν εἴη. In both passages we have expressed what would be the result of an inadmissible supposition: here "if there were a special sense," as there cannot be. For, if there were, then (οὕτω) the perception of motion or magnitude or number, which is conjoined with a given special sensible, would be related to it as sweetness is now to white colour when these qualities are united in the same object and we are said to perceive them both by sight. Cf. Neuhäuser, *Arist. Lehre*, p. 32 sq.

a 22. αἰσθανόμεθα. This statement of A. clearly stands in need of correction. From the sight of a white object we may infer its sweetness, or from the previous experience of the conjunction of whiteness and sweetness in the same object we may anticipate a similar conjunction now; but in neither case can we be properly said to *perceive* sweetness. Below, a 30, a similar statement is qualified by κατὰ συμβεβηκός. Philop. substitutes the *sensus communis* for sight: at least, so I understand 460, 1 ἀμφοῖν δὲ λέγει τὴν κοινὴν αἰσθησιν. ἐπειδὴ γὰρ ἔχομεν, φησὶν, αἰσθησιν καὶ γλυκέος καὶ ξανθοῦ, ὅψιν καὶ γεῦσιν, ταύτῃ ὅταν ἐμπέσῃ χρώμα ξανθόν, κινουμένου τοῦ τύπου τοῦ γλυκέος γινώσκουμεν ὅτι μέλι ἐστὶν ἐκ τοῦ τύπου οὗ ἔλαβεν, ὅτε ᾅμα ὅψιν καὶ γεῦσιν ἐνήργησαν. A similar case is *Eth. Nic.* 1113 a 1; we can *see* the loaf is properly baked. τοῦτο δ' ὅτι=τοῦτο δὲ ὥδε συμβαίνει ὅτι, "and this comes about because."

a 23. ἀμφοῖν, of sweet and white. ἔχοντες τυγχάνομεν. Cf. 424 b 29. συμπίπτουσιν. The word συμπίπτειν in A., as in Plato, is used to denote *concurrence* of sensations, qualities and the like. Cf. *Eth. Nic.* 1171 a 7, Plato, *Rep.* 402 D, *Tim.* 75 B, *Phil.* 39 A ἡ μνήμη ταῖς αἰσθήσεσι συμπίπτουσα εἰς ταῦτόν.

a 24. ᾅμα γνωρίζομεν, "we cognise both simultaneously," or co-instantaneously. This throws some light on the αἰσθησις just mentioned. The characteristic of all the special senses is that they cannot perceive more than one object in one single act of sensation (see the discussion of the question, *De Sensu*, c. 7): nor can two special senses produce sensations simultaneously. When two or more objects are judged co-instantaneously the sense at work is what is technically known as κοινὴ αἰσθησις, *sensus communis*. Simpl. (184, 22 sqq.), ignoring ᾅμα, prefers to explain ἀμφοῖν...αἰσθησιν by [αἰσθήσεις] διαφόρους δηλαδὴ, χρώματος μὲν τὴν ὅψιν ὄσαν, τοῦ δὲ γλυκέος τὴν γεῦσιν and to take ἦ, not as the relative, but as equivalent to καθ' ὃ, as in 423 b 22, 426 b 15. Philop., on the other hand, gratuitously introduces πρότερον (with a present tense), following Plutarch: (459, 32) λείπει γὰρ ἐν τῷ ῥητῷ τὸ πρότερον, ὥς φησι Πλούταρχος. His

explanation comes to this: yesterday (455, 24) we both saw and tasted sugar, to-day we see it but do not taste it: the sight of white to-day acts upon the impression (τύπος) of yesterday's white stored up in the *sensus communis* and through it on the impression of sweet, also stored up there. But even so the *αἰσθανόμεθα* of a 22 is inaccurate. In place of two objects simultaneously present we have a present object and a memory or image of a past object. εἰ δὲ μή. Neuhaeuser supplies ἀμφοῖν ἔχοντες ἐτυγχάνομεν αἰσθῆσιν. It would come to the same thing if we supplied οὕτως ἔσται from a 21. Grammatically one might go back to a 20 ἀδύνατον, and so Philop. may have understood it (460, 6—9). The hypothesis of a single special sense for τὰ κοινὰ still holds the field. What will follow? One of two consequences. The first has been considered: τὰ κοινὰ and τὰ ἴδια would be perceived by the special sense as it now perceives the ἴδιον of some other special sense along with its own ἴδιον, experience having generated an inseparable association: whereby, however, it is sometimes deceived (425 b 3). This is the most favourable case. But the link between κοινὰ and ἴδια as perceived by the same special sense might be weaker: there might be no inseparable association. If there were not (εἰ δὲ μή), we should say that we perceived motion and magnitude by sight or any other special sense on no better grounds than we now say that we perceive Cleon's son by sight. Cf. 418 a 21—23. As appears from 425 a 30, even the inseparable association of sweetness and colour is only perceived κατὰ συμβεβηκός, and Them. and Philop. both point out that the phrase is used in two different senses in the two cases.

a 24. οὐδαμῶς ἂν ἀλλ' ἢ κατὰ συμβεβηκός. Strictly speaking, in the case supposed "sweetness" is a κατὰ συμβεβηκός αἰσθητόν. This follows from the test proposed in 418 a 23. Sight is not acted upon by the sweet thing as such (οὐδὲν πάσχει ἢ τοιούτου ὑπὸ τοῦ αἰσθητοῦ, int. τὸ αἰσθητήριον). But the fact is that there are degrees of "indirectness"; the phrase "*per accidens*," that is, or κατὰ συμβεβηκός, admits of different applications according to the degree of remoteness. Cf. *Phys.* II. 3, 195 b 1 ἔστι δὲ καὶ τῶν συμβεβηκότων ἄλλα ἄλλων πορρώτερον καὶ ἐγγύτερον. The difference here seems to be between the recognition of a quality formerly perceived on the occurrence of one with which it was then conjoined, and the recognition of an attribute that may never have been so conjoined and has in fact no permanent connexion with the quality which we do perceive. So Them. (81, 35 H., 150, 23 Sp.) διττός γὰρ ὁ τρόπος τῶν κατὰ συμβεβηκός αἰσθητῶν· ἢ γὰρ ὅταν τῇ ὅψει κρίνωμεν τὸ γλυκύ, (82, 7 H., 151, 10 Sp.) ἕτερος δὲ ὅταν προσιόντα τὸν Κλέωνος υἱὸν θεασάμενοι μὴ τοῦτο ἀποφανώμεθα μόνον ὅτι λευκός, ἀλλ' ὅτι καὶ Κλέωνος υἱός. So Philop. 454, 15 sqq.

a 25. οἷον τὸν Κλέωνος υἱόν, int. αἰσθανόμεθα. οὐχ ὅτι Κλέωνος υἱός, ἀλλ' ὅτι λευκός. I have translated this as if ὅτι meant "that," which apparently is the view of Them. as just cited; but it is more probable, when we compare 418 a 22, that here, as there, ὅτι means "because." We perceive Cleon's son not because he is Cleon's son, but because he is white.

a 26. τοῦτο, int. τῷ λευκῷ, "the white colour that we see." Of this white colour it is (in Aristotelian phrase) "an accident" that it is Cleon's son. Substance is conjoined with accident. See *notes* on 418 a 22 sq. The νῖφ is dative by attraction to τοῦτο.

a 27. αἰσθῆσιν κοινήν, "a common sensibility," namely that which serves as a common basis to all the special modes of sense-perception (αἰσθήσεις), i.e. the five senses. The modern associations of the term "common sense" preclude its use as an equivalent of Aristotle's κοινή αἰσθησις or as an exact philosophical term at all. Both Simpl. and Philop. deny that the term is used here in the technical sense, but I am not satisfied that they are right.

a 28. οὐ κατὰ συμβεβηκός. Compared with perception of sweetness on sight of a white object which is sweet, or, still more, compared with perception of Cleon's son on sight of a white object which happens to be that person, perception of "common sensibles" by the κοινή αἴσθησις is direct and *not incidental*. The ordinary interpretation of the chapter makes this statement contradict the traditional text of a 15. But see *note*.

a 28. οὐκ ἔρ' ἐστὶν ἰδία, int. αἴσθησις τῶν κοινῶν αἰσθητῶν. If they are directly perceived by a "common sensibility," it follows that there is no one of the five nor any special sixth sense to which they are related as special objects.

a 29. οὕτως ὥσπερ εἴρηται. It has been remarked that, in order to completeness, A. should have added here the other case of indirect "perception" (so-called), to which in fact he recurs in the next sentence.

a 30. τὰ δ' ἀλλήλων ἰδία, "one another's proper objects." A., having claimed the κοινὰ for *sensus communis*, goes on to show how it sometimes judges ἰδία, as he had already hinted a 22—24.

a 31. οὐχ ἢ αὐταί, "not in their own right as so many separate senses." ἀλλ' ἢ μία, "but as forming (for the time being) one sense." Philop. (461, 5) οὐχ <ἢ> αὐταί (int. αἱ πέντε αἰσθήσεις), ἀλλὰ κατὰ τὸ ἔχειν μίαν κοινὴν αἴσθησιν. From ἀμα he argues μία αἴσθησις.

425 b 1. ἐπὶ τοῦ αὐτοῦ, int. αἰσθητοῦ: "in the case of the same thing." Cf. *Phys.* VIII. 3, 254 a 6 ὁρῶμεν γὰρ καὶ ἐπὶ τῶν αὐτῶν γιγνομένας τὰς εἰρημένας μεταβολάς. χολήν, int. αἰσθάνεται, the singular being borne out by b 3 ἀπατάται and ἐὰν ἢ ξανθόν [int. τὸ αἰσθητόν], χολήν οἴεται εἶναι. The anticipatory accusative seems more in conformity with Attic usage than the nominative preceding ὅτι as read by Biehl in his second impression. The genitive χολῆς (*Simpl.* in interpr. 186, 12, but apparently citing the text) is probably assimilated to τοῦ αὐτοῦ; it might also be joined with γένηται ἢ αἰσθησις.

b 2. ἐτέρας γε. It belongs to no other sense, distinct from the κοινή, to affirm the co-existence in one object of two or more qualities. We should have expected οὐδετέρας, neither sight nor taste. Judgments of identity and difference are claimed for the *sensus communis* in the next chapter, 426 b 14 sqq. ἄμφω, τὸ ξανθόν τε καὶ πικρόν (*Simpl.* 186, 18).

b 3. διὸ καὶ ἀπατάται, int. ἢ αἰσθησις. Sense is liable to be deceived in this reference of qualities to objects, whereas, as was emphasised in 418 a 12, no single sense is ever deceived about the qualities which it directly perceives (καὶ οὐκ ἀπατάται ὅτι χρώμα οὐδ' ὅτι ψόφος, ἀλλὰ τί τὸ κεχρωσμένον ἢ ποῦ, ἢ τί τὸ ψοφοῦν ἢ ποῦ, 418 a 15). The inference is that it is not the special sense functioning with its proper objects which is at work when we are said to see sweetness by sight.

425 b 4—11. The final cause of a plurality of special senses is to ensure the recognition of the common sensibles. If sight were our only sense in a world of colours, certain attributes of things would elude us altogether. It would not be easy to detect magnitude and the other common sensibles, for they would never be found apart from colour [§ 8].

425 b 4. τίνος ἕνεκα. Why, if the several senses combine, as we have seen, for certain purposes, there should be a plurality of senses at all. I see no reason to restrict the question with *Simpl.*, who would understand τῶν κοινῶν after αἰσθήσεις (186, 26), on the ground that there are other reasons for a plurality of senses, which A. does not mention here.

b 5. ἢ ὅπως. Aristotle's answer. It is that a plurality of senses better secures the recognition of the common sensibles. A., always teleological in his

enquiries, urges the necessity that such qualities as magnitude and number should be made familiar, and that their importance should be forced upon us by their being presented in a variety of ways.

b 5. τὰ ἀκολουθοῦντα καὶ κοινά, "the accompaniments of the objects of the special senses which are common to all the senses." The "common sensibles" are fitly called ἀκολουθοῦντα because the "special sensibles" (colour, sounds, tangible qualities) are always accompanied by one or more of them. Thus everything perceptible has *number*, is either at *rest* or in *motion*, and things in space have magnitude (μέγεθος) and shape.

b 6. εἰ γὰρ ᾗν ἡ ὄψις μόνη. We may compare the imaginary case put for the sake of argument *Metaph.* 1053 b 32 if all things were colours, and again (iž. b 35) if all were melodies or (1054 a 1) sounds or (a 3) rectilinear figures.

b 7. αὕτη λευκοῦ. Here I have adopted Professor H. Jackson's conjecture, αὕτη for αὐτή. More than once in the treatise αὕτη is suspicious, but in 415 b 10, 427 b 15 it has an appropriateness which I fail to discover here. ἐλάνθανεν ἂν, int. τὰ κοινά. We might have failed to discern the common sensibles as distinct from τὰ ἴδια. Sight would in relation to τὰ κοινά be in the same position as that in which all special sensibles would be in the case supposed above 425 a 21—27, viz. of the existence of a special sense for the κοινά. Cf. again the consequences which would follow in the imaginary case put 423 a 6—11.

b 8. πάντα, "all sensibles," that is κοινά and ἴδια alike. There would in fact in the supposed case be no distinction: all sensibles would be ὁρατὰ and, in fact, colour, just as now various species of quality are merged in the object of touch. διὰ τὸ...9 μέγεθος. The only μέγεθος which he would perceive would always be coloured.

b 9. ἐν ἐτέρῳ αἰσθητῷ, "in a second object," i.e. one which is the object proper to a sense other than the sense which perceives this common sensible at first: e.g. magnitude may be first perceived by sight and then perceived by touch in a tangible object (ἐν ἐτέρῳ).

b 10. ἄλλο τι, "something distinct," i.e. from the two or more ἴδια with which it is conjoined and from other κοινά.

## CHAPTER II.

**425 b 12—25.** The consciousness which accompanies sensation must be referred to sense itself. For example, we perceive that we see. Is this by sight or by some other sense? On the latter assumption, the subsidiary sense will have a double object, not only sight which it is introduced to perceive, but also colour, the object of sight. Hence, unless we are driven back upon the other alternative that sight sees itself, there will be two senses dealing with the same object, colour, viz. sight and the subsidiary sense. Again, there is another objection to assuming a subsidiary sense. One subsidiary sense necessitates another to perceive it, and so on. Thus either the series of such subsidiary senses will be infinite, or there will be a halt when we come to a sense which has no other beyond it to perceive it in action, and, if so, we had better stop at sight itself [§ 1]. But here there is a difficulty. From the proposition "it is by sight that we perceive that we see" in its equivalent form "by sight we shall perceive that which sees," does it not follow that that which sees, as being the object of sight, must have colour? This difficulty may be met by the consideration that "to perceive by sight" has more than one meaning [§ 2], as when we

discriminate darkness and light, and by the further consideration that in perception the form is received without the matter, so that in a qualified sense that which sees may be said to have colour when it receives the form of colour; and for the same reason sensations and memory impressions remain in the organs of sense after the object of sense has been removed [§ 3].

With this passage should be compared *De Somno* 2, 455 a 12 ἐπεὶ δ' ὑπάρχει καθ' ἐκάστην αἴσθησιν τὸ μὲν τι ἴδιον τὸ δὲ τι κοινόν, ἴδιον μὲν οἷον τῇ ὄψει τὸ ὄραν, τῇ δ' ἀκοῇ τὸ ἀκούειν, καὶ ταῖς ἄλλαις ἐκάστη κατὰ τὸν αὐτὸν τρόπον, ἔστι δέ τις καὶ κοινὴ δύναμις ἀκολουθοῦσα πάσαις, ἣ καὶ ὅτι ὄρᾷ καὶ ἀκούει αἰσθάνεται, "in each particular sense, besides something special to it, there is a common element as well. The special element is, in sight, seeing, in hearing, the act of hearing, and so with the other senses severally. But there is also a common faculty accompanying them all, whereby we perceive that we see and hear." Here we have an explicit positive answer to the question raised but not properly answered in the present chapter, namely how we perceive that we see and hear. It is in virtue of a common faculty accompanying all the special senses, just as 425 b 5 sq., 8 sq. the common sensibles were described as accompanying the objects of the special senses. It cannot then be doubted that this κοινὴ δύναμις ἀκολουθοῦσα πάσαις (cf. *De Somno*) is precisely the common sensibility, αἴσθησις κοινή, of 425 a 27. The entire passage reminds us of the discussion in Plato, *Charmides* 167 sqq. There the conception of a science of science is examined, a conception which in the course of the argument is shown to be impossible, and useless, if possible. Among the examples adduced to prove the impossibility we find the senses of sight and hearing. A sight which sees itself or a hearing which hears itself will be regarded as incredible by some, though not, Plato is careful to add, by others. Sight, if it sees itself, must be coloured, for sight cannot see that which has no colour, which is precisely the difficulty of 425 b 17 sqq., and similarly for hearing: if hearing hears itself, it must hear a voice, for there is no other way of hearing, which reminds us of 426 a 15 sqq., a 27 sqq.

**b 12. αἰσθανόμεθα.** The fact which this word expresses is that we are conscious that we see and hear. Such consciousness is regarded by A. as in itself a sense-perception attendant on the original perception of the colour seen or the sound heard. To denote this Alex. Aphr. regularly employs the compound συν-αἰσθάνεσθαι, which in Aristotle and Eudemos is rarely found and never in precisely this sense, unless it be *Eth. Nic.* 1170 b 4 (see Stewart *ad loc.*). But the simple verb αἰσθάνεσθαι is used to mean the consciousness which attends on all activities in *Eth. Nic.* 1170 a 25 εἰ δ' αὐτὸ τὸ ζῆν ἀγαθὸν καὶ ἡδύ, ... (a 29) ὁ δ' ὁρῶν ὅτι ὄρᾷ αἰσθάνεται καὶ ὁ ἀκούων ὅτι ἀκούει καὶ ὁ βαδίζων ὅτι βαδίζει, καὶ ἐπὶ τῶν ἄλλων ὁμοίως ἔστι τι τὸ αἰσθανόμενον ὅτι ἐνεργοῦμεν, ὥστε ἂν αἰσθανώμεθ' [int. αἰσθανόμεθα] ὅτι αἰσθανόμεθα, κἂν νοῶμεν, ὅτι νοοῦμεν, τὸ δ' ὅτι αἰσθανόμεθα ἢ νοοῦμεν, ὅτι ἐσμέν (τὸ γὰρ εἶναι ἦν αἰσθάνεσθαι ἢ νοεῖν), τὸ δ' αἰσθάνεσθαι ὅτι ζῆν, τῶν ἡδέων καθ' αὐτὸ (φύσει γὰρ ἀγαθὸν ζῶν, τὸ δ' ἀγαθὸν ὑπάρχον ἐν ἑαυτῷ αἰσθάνεσθαι ἡδύ). Cf. *De Sensu* 7, 449 a 8 ἀνάγκη ἄρα εἶναι τῆς ψυχῆς, ὃ ἅπαντα αἰσθάνεται.

**b 13. αἰσθάνεσθαι.** The subject to be supplied is τὸ (or τὸν) αἰσθανόμενον: see note on 403 a 22, ὀργίζεται, and cf. *Eth. Nic.* 1170 a 31 τὸ αἰσθανόμενον ὅτι ἐνεργοῦμεν cited in last note. ἡ ἑτέρα, int. αἰσθῆσις, a sense distinct from sight. Obviously, if sight does not fulfil the required conditions, still less can hearing or any other special sense perceive sight. Thus the old hypothesis of a sixth sense, rejected in the last chapter, reappears in a new form to be again refuted: and this view of the passage is confirmed by the more explicit problem in *De Somno*. A. leaves out of account the alternative that it is not by sense at all that we are conscious of seeing, hearing etc. Cf. *De Somno* 2, 455 a 15 ἔστι



δέ τις καὶ κοινὴ δύναμις ἀκολουθοῦσα πάσαις [int. ταῖς αἰσθήσεσιν] ἢ καὶ ὅτι ὁρᾷ καὶ ἀκούει αἰσθάνεται. οὐ γὰρ δὴ τῇ γε ὄψει ὁρᾷ ὅτι ὁρᾷ, καὶ κρίνει δὴ καὶ δύναται κρίναι ὅτι ἕτερα τὰ γλυκέα τῶν λευκῶν, οὔτε γεύσει οὔτε ὄψει οὐτ' ἀμφοῖν, ἀλλὰ τινι κοινῇ μορίῳ τῶν αἰσθητηρίων πάντων. Here there is not the least suggestion that sense is inadequate (cf. 426 b 14 sq.): ὁρᾷ ὅτι ὁρᾷ, not indeed by sight, but by the κοινὴ δύναμις, employing κοινόν τι τῶν αἰσθητηρίων πάντων.

b 13. ἀλλ' ἡ αὕτη ἔσται. But sight and its object colour must be objects of the same sense and therefore, if we adopt the alternative ἡ ἐτέρα, we shall have two senses perceiving colour, (1) sight perceiving it directly and (2) ἐτέρα, ἡ αἰσθανομένη ὅτι ὁρᾷ, the hypothetical sense which, while perceiving sight directly, indirectly perceives colour; while if with A. we reject this conclusion as absurd, we are driven to the other alternative (τῇ ὄψει), and thus we have a sense perceiving itself; cf. 425 b 19 ὄψεται τις τὸ ὁρῶν. A. assumes that the sense which perceives sensation must perceive the object of sensation, τὸ αἰσθητόν: cf. Them. 83, 15 H., 153, 17 Sp. οὐ γὰρ οἶόν τε ἀποφύνασθαι περὶ τῆς ὄψεως ὅτι ὁρᾷ μὴ γνώσκουσιν τὸ ὁρώμενον. But is this assumption self-evident? It is so only within the narrow limits laid down 418 a 14—16, according to which colour alone is the object, ἴδιον αἰσθητόν, of seeing.

b 14. τοῦ ὑποκειμένου χρώματος, the colour which is the subject or subject-matter of vision. The same mode of speech occurs below 426 b 8 ἐκάστη μὲν οὖν αἰσθησις τοῦ ὑποκειμένου αἰσθητοῦ ἐστίν. This is one way of expressing the relation between psychical processes or operations (ἔργα καὶ πράξεις) and what are called 402 b 15 ἀντικείμενα, corresponding or correlative objects. The application of the terms "subject" and "object" to denote the antithesis between "that which perceives" and "that which is perceived," between "that which knows" and "that which is known," is, of course, un-Aristotelian and in fact quite modern. The antithesis itself is familiar enough to A. and is expressed in various ways, e.g. by τὸ αἰσθητικόν and τὸ αἰσθητόν, τὸ νοητικόν and τὸ νοητόν. Here τὸ αἰσθητόν is described, relatively to the sense-faculty which apprehends it, as τὸ ὑποκείμενον, that which falls under its ken, that which is its province, "its subject" (*subjectum*). The same αἰσθητόν, regarded as "set over against," logically contrasted with, the percipient faculty or operation, is called ἀντικείμενον (*obiectum*).

b 14. ἡ δύο, int. αἰσθήσεις. τοῦ αὐτοῦ, int. αἰσθητοῦ, e.g. in the case of sight τοῦ ὑποκειμένου χρώματος.

b 15. ἡ αὕτη αὐτῆς, int. αἰσθησις ἔσται. This is a generalisation of the first of the two alternative hypotheses, viz. that it is by sight (τῇ ὄψει) that we perceive that we see. As against the second alternative, ἐτέρα, it commends itself to A.: but, as he points out, it is not free from difficulties; and, if stated in the crude form τῇ ὄψει ὁρᾷ ὅτι ὁρᾷ, is untenable, as he says in *De Somno* l.c., 455 a 17 sq. οὐ γὰρ δὴ τῇ γε ὄψει ὁρᾷ ὅτι ὁρᾷ. It is accordingly there superseded by the more explicit solution cited above. I may remark parenthetically that it is of course not in the same way that we should interpret such passages as 417 a 2—4, *Metaph.* 1010 b 35—37, where A. denies that αἰσθησις can be of itself or have no external thing, but simply itself, for its object. Cf. *Metaph.* 1074 b 35 sq. ἔτι δ' εἰ καὶ. A further argument against the hypothesis that consciousness of sight, hearing etc. is by a separate special sense (ἐτέρα).

b 16. ἡ εἰς ἄπειρον εἶναι. To explain the consciousness of the second, we shall require a third sense, and similarly a fourth to explain the consciousness of the third, and so on ad infinitum. Such infinite regress is always assumed by A. to be in actuality impossible; cf. note on 411 b 13. Mr Shorey (*A. J. Ph.* xxii. 154 sq.) adduces a similar case in Plato, *Theaet.* 200 c, where also the

inference is drawn that it is better to accept the paradox at the beginning of the series than later, if an infinite regress is our only way of escape from it. ἡ αὐτή τις ἔσται αὐτῆς. Some one or other of the series of subsidiary faculties will have to be self-perceiving. Sooner or later we shall have to do what might just as well, therefore, be done at first, viz. admit a self-perceiving faculty. M. Rodier's rendering "ce second sens devra se sentir lui-même" apparently overlooks τις. Cf. Innes, *Cl. Rev.* XVI. 462: "the necessary alternative to the continuation of the series is not that the second of the series but that some one of the series should be its own object."

b 17. ἐπὶ τῆς πρώτης, int. αἰσθήσεως. τοῦτο ποιητέον, i.e. λεκτέον ὅτι αὐτὴ αὐτῆς αἰσθῆσις ἔσται.

b 17 εἰ γὰρ τὸ τῇ ὄψει...18 τὸ ἔχον, i.e. granting, as has been assumed throughout the treatise, (a) that perceiving by sight is seeing, and (δ) that what is seen is always "colour" or "the coloured" (the coloured thing, of course, *quid* coloured: cf. 424 a 21—24 and contrast 418 a 23 sq.).

b 19. εἰ ὁψεται τις τὸ ὁρῶν. The stress is on the accusative τὸ ὁρῶν: "if that which you are to see is something which itself sees." This hypothesis merely draws out what is implicit in the alternative αὐτὴ αὐτῆς (αἰσθῆσις ἔσται). It is quite possible that with τις should be supplied αἰσθῆσις, and this would agree with b 16 above; but even then, in view of the general principle enunciated 408 b 13 sqq., we cannot be far wrong in translating as if τις were the indefinite pronoun. τὸ ὁρῶν πρῶτον, "that which primarily or directly sees." By πρῶτον it is implied (see *note* on 422 b 22) that organ and object have been brought at once into communication. The primary organ of any sense is that in which primarily resides the faculty (424 a 24 sq.) of receiving sensible forms without their matter. The difficulty is that, according to 418 b 26 sq., "it is that which is colourless which is receptive of colour." Which view are we to take: is it colourless or coloured? And is it the eye or a central sense-organ which is τὸ ὁρῶν πρῶτον and is in direct communication with the object?

b 20. φανερόν τοίνυν. The difficulty can be met partly by enlarging the meaning of τῇ ὄψει αἰσθάνεσθαι, to perceive by sight, partly by explaining that in a certain qualified way the seeing faculty may be said to have colour inasmuch as it receives the form, though not the matter, of colour.

b 20. ὅτι οὐχ ἓν. We might have expected ὅτι πολλαχῶς λέγεται, i.e. perceiving by sight has more senses than one and therefore is an ambiguous phrase: οὐχ ἓν (ἔστι) stands to the more usual οὐχ ἀπλῶς (or πλεοναχῶς) λέγεται (cf. 426 a 26 ἀπλῶς ἔλεγον) as διττόν ἐστι stands to διττῶς λέγεται (cf. διττόν γὰρ ἡ ἀκοή, καὶ διττόν ὁ ψόφος 426 a 7 sq., *Metaph.* 1069 b 15 διττόν τὸ ὄν, *Pol.* 1342 a 18 ὁ θεατῆς διττός, *ib.* 1261 b 28 τὸ γὰρ πάντες καὶ ἀμφοτέρα καὶ περιττὰ καὶ ἄρτια διὰ τὸ διττόν καὶ ἐν τοῖς λόγοις ἐριστικούς ποιεῖ συλλογισμούς).

b 22. οὐχ ὡσαύτως. If seeing were always the apprehension of colours or coloured objects (τὸ ὁρᾶν χρωμάτων ἐστὶν ἀντίληψις, *Philop.* 463, 38 sq.), it might include perception of light, which is in a manner the colour of the transparent medium (418 b 11). To discern light would be to see the illuminated air. But to discern darkness is to try to see either colour or light and to be conscious of failure: darkness, at any rate, has no colour, 418 b 28 sq., and we do not discern it in the same way as we discern light. A. is probably thinking, not so much of absolute darkness, as of perception of light or darkness in twilight, when colours cannot be seen. Cf. 422 a 20 (τὸ γὰρ σκότος ἄρατον, κρίνει δὲ καὶ τοῦτο ἡ ὄψις), ἔτι τοῦ λίαν λαμπροῦ (καὶ γὰρ τοῦτο ἄρατον, ἄλλον δὲ τρόπον τοῦ σκοτούς), where ἄλλον τρόπον suggests that ὡσαύτως in our passage discriminates the perception of darkness from the perception of light, rather than from the perception of colours.

b 23. δεκτικόν. What is here said of the sense-organ is said 424 a 18 of sense, the λόγος or δύναμις of the organ.

b 24. ἕκαστον, "every sense-organ" and therefore the eye. See note on ἐκάστου, 424 a 22. διδ, because we receive the form without the matter. To receive this immaterial form in actual sensation is to undergo some change, ἀλλοιωσθαι πως, and, when ἀλλοίωσις has once taken place, the organ does not at once lose the modification which the sensation produced in it. ἀπελθόντων, when the external object has ceased to stimulate the sense. Cf. *De Insomni.* 2, 459 a 24 τὰ γὰρ αἰσθητὰ καθ' ἕκαστον αἰσθητήριον ἡμῖν ἐμποιοῦσιν αἰσθησιν, καὶ τὸ γινόμενον ὑπ' αὐτῶν πάθος οὐ μόνον ἐνυπάρχει ἐν τοῖς αἰσθητήριοις ἐνεργουσῶν τῶν αἰσθήσεων, ἀλλὰ καὶ ἀπελθουσῶν, *De Mem.* 1, 450 a 26 τοῦ πράγματος ἀπόντος, *Metaph.* 1036 a 6 ἀπελθόντες ἐκ τῆς ἐντελεχείας, also 408 b 18, *De Mem.* 1, 450 a 30—32.

b 24. ἐνείσιν αἱ αἰσθήσεις καὶ φαντασίαι: cf. *De Insomni.* 2, 459 b 5 διὸ τὸ πάθος ἐστὶν οὐ μόνον ἐν αἰσθανομένοις τοῖς αἰσθητήριοις, ἀλλὰ καὶ ἐν πεπαυμένοις, καὶ ἐν βάθει καὶ ἐπιπολῇς, not only in the peripheral organs "at the surface," but deep down in the central organ. Cf. also *De Insomni.* 2, 460 b 2 ἀπελθόντος τοῦ θύραθεν αἰσθητοῦ ἐμμένει τὰ αἰσθήματα αἰσθητὰ ὄντα. Since sensations are movements (not φοραί, but ἀλλοιώσεις, 408 b 10 sq.), it is not inconceivable that they should in turn set up other movements, cf. 428 b 10 sqq. Such are imaginings and memories: cf. *De Mem.* 1, 450 a 25—32. See note on 408 b 18, μόνως. On the plural φαντασίαι = φαντάσματα see ad 420 b 32.

**425 b 26—426 b 7.** In actual sensation the sense and its object, e.g. hearing and sound heard, are identical, though logically we can distinguish the one from the other in thought and give them different names, e.g. audition and resonance [§ 4]. The action of the agent, as well as the passivity of the patient, resides in the patient. Sound being such an agent and hearing such a patient, it will be in the sense of hearing, or in that which has the power to hear, that not only audition but also actual sound or resonance is realised [§ 5]. But the actualities as distinct from the potentialities are often without a name: e.g. there are no terms to distinguish colour and flavour actually seen and tasted from the corresponding potentialities [§ 6]. Actual sensation and the sensible object in actuality (e.g. actual hearing and actual sound) are maintained and destroyed simultaneously, but such simultaneous co-existence is not necessary for potential sensation and the potential sensible [§ 7]. This qualification was overlooked by the earlier physicists when they committed themselves to the assertion that colour does not exist apart from seeing nor flavour apart from tasting: I mean, they failed to distinguish between actual and potential sensation and sensible [§ 8]. The sense must be a proportion when its object is so. This explains the fact that excess in the sensible object destroys the sense. Objects pure and unmixed do indeed give pleasure, but the pleasure is heightened when the object is not simple, but a mixture in which opposite ingredients are blended. The sense being the due proportion, excess in the sensible causes pain, when it does not destroy [§ 9].

425 b 26 ἡ δὲ τοῦ αἰσθητοῦ...27 αὐταῖς. See notes on 424 a 24 κατὰ τὸν λόγον, on 424 a 25 τὸ δ' εἶναι ἕτερον, and for τὸ εἶναι with dative 408 a 25, end of note. The actively operant sensible is identical with the actively operant sense at the moment of perception. Later in this book we hear that actual knowledge is identical with the thing actually known at the moment of cognition; cf. 430 a 19 sq., 431 a 1. This identity of subject and object in the act of cognition, whether perception or knowledge, is stated with qualifications which deserve careful attention. Sense-perception may be actual or potential, 417 a 10:

cf. 431 b 24—26. It is only actual or actively operant sense which is identical with its object. The sensible, again, may be either an actual or only a potential sensible; we are dealing with the former only. The question what is sense when not percipient and what is the sensible when not perceived does not concern us. Lastly, though τῷ ὑποκειμένῳ ἓν, one and the same in material substratum, *materialiter*, percipient sense and perceived sensible are in essence or notion distinct. We can analyse this one thing and distinguish in thought its two characters or aspects. They differ as the ratio 2 : 1 differs from the ratio 1 : 2 or as up hill differs from down hill, *Phys.* III. 3, 202 a 18 sqq. For this qualified identity of subject and object in actual perception, the way has been prepared by the assimilation which was so marked a feature of the account of the separate senses, e.g. 418 a 3 τὸ δ' αἰσθητικὸν δυνάμει ἐστὶν οἷον τὸ αἰσθητὸν ἥδη ἐντελεχεία, καθάπερ εἴρηται. πάσχει μὲν οὖν οὐχ ὁμοιον ὄν, πεπονθὸς δ' ὁμοιωταὶ καὶ ἐστὶν οἷον ἐκεῖνο: cf. 422 b 15 ὥστε τὸ γευστικὸν ἐστὶ τὸ δυνάμει τοιοῦτον, γευστὸν δὲ τὸ ποιητικὸν ἐντελεχεία αὐτοῦ: further, by the account of perception given in 424 a 17 sqq. Objects of sense, colours, sounds and smells, there are no doubt in abundance, but unless actually perceived they are only potential objects of sense, whatever else they may be actually.

b 27. λέγω δ' οἷον, "I mean, for example." It might have been expected that λέγω would influence the construction, but οἷον is followed by the nominative, just as if λέγω had not preceded.

b 28. ἔστι, "it is possible" = ἐνδέχεται.

b 29. τὸ ἔχον ψόφον, i.e. τὸ δυνάμενον ψοφεῖν of the next line. See *note* on ἔχειν ψόφον, 419 b 6. οὐκ ἀεὶ ψοφεῖ, int. κατ' ἐνέργειαν. Cf. 419 b 4 sq., and 426 a 8 *infra*.

b 29. ὅταν δ' ἐνεργῇ. The transition from dormant power to its actual exercise must be treated as equivalent to πάσχειν or κινεῖσθαι, 417 a 14 sqq. The sense is stimulated and acted upon by the object, but, as there explained, this does not mean destruction by the opposite, but rather preservation of the potentially existent and its normal development: εἰς αὐτὸ γὰρ ἡ ἐπίδοσις καὶ εἰς ἐντελέχειαν, 417 b 6. The external stimulus is the occasion of a development from dormant potentiality to active exercise, 431 a 4 sqq.

b 30. τότε, at the moment of actual operation, ὅταν ἐνεργῇ. There is an error in the critical *notes* upon this line. According to Stapfer, *Studia*, p. 7, *Krit. Studien*, p. 19, n., the lacuna in cod. E is longer by the two words καὶ ὁ than Bekker has reported. The note should have run: "τότε...31. καὶ ὁ om. E." Stapfer adds: "partim insert, partim in marg. posit. ab E<sup>3</sup>."

b 31. ἅμα γίνεται. Here only the simultaneity of the two processes is mentioned; their identity, subject to the proper qualifications, follows from the fact that, as explained below, 426 a 4 sq., they both take effect ἐν τῷ πάσχοντι.

426 a 2. εἰ δὴ...ἐν τῷ ποιουμένῳ, "assuming, therefore, that moving, or rather acting and being acted upon, go on in that which is undergoing the action." From *Phys.* III., c. 3, we learn that κίνησις takes effect ἐν τῷ κινουμένῳ. As he is dealing with sense-perception, which he sometimes calls a κίνησις but regularly a πάθος, A. not only adds (426 a 2) καὶ ἡ ποίησις τοὺς κίνησις, but even takes the unusual step of substituting ἐν τῷ ποιουμένῳ for ἐν τῷ κινουμένῳ when we should have expected ἐν τῷ πάσχοντι, cf. 426 a 5, 10 and 414 a 11 ἐν τῷ πάσχοντι καὶ διατιθέμενῳ. The passage in the *Physics* is III. 3, 202 a 13 καὶ τὸ ἀπορούμενον δὲ φανερόν, ὅτι ἐστὶν ἡ κίνησις ἐν τῷ κινητῷ· ἐντελέχεια γὰρ ἐστὶ τούτου ὑπὸ τοῦ κινητικοῦ. καὶ ἡ τοῦ κινητικοῦ δὲ ἐνέργεια οὐκ ἄλλη ἐστίν· δεῖ μὲν γὰρ εἶναι ἐντελέχειαν ἀμφοῖν· κινητικὸν μὲν γὰρ ἐστὶ τῷ δύνασθαι, κινοῦν δὲ τῷ ἐνεργεῖν· ἀλλ' ἐστὶν ἐνεργητικὸν τοῦ κινητοῦ, ὥστε ὁμοίως μία ἡ ἀμφοῖν ἐνέργεια ὥσπερ τὸ

αὐτὸ διάστημα ἐν πρὸς δύο καὶ δύο πρὸς ἓν, καὶ τὸ ἄναγτες καὶ τὸ κάταγτες· ταῦτα γὰρ ἐν μὲν ἔστιν, ὁ μέντοι λόγος οὐχ εἴς. Cf. also *Phys.* v. 1, 224 b 4 sqq., b 25 ἡ κίνησις οὐκ ἐν τῷ εἶδει ἀλλ' ἐν τῷ κινουμένῳ καὶ κινήτῳ κατ' ἐνέργειαν. Also *De Gen. et Corr.* i. 7, 324 b 5 sqq.; cf. *Phys.* viii. 3. In our passage A., having joined ποίησις with κίνησις, goes on to add ἐν τῷ ποιουμένῳ for all three, whereas strictly ἡ ποίησις is ἐν τῷ ποιουμένῳ, just as ἡ κίνησις is ἐν τῷ κινουμένῳ and as τὸ πάθος is ἐν τῷ πάσχοντι. That the present passive participle ποιούμενον was not displaced by πάσχον is attested by *Metaph.* 1050 a 31 τούτων μὲν ἡ ἐνέργεια ἐν τῷ ποιουμένῳ ἐστίν, *Phys.* ii. 1, 192 b 27 ἕκαστον τῶν ποιουμένων, *ib.* ii. 3, 194 b 31 καὶ ὅλως τὸ ποιοῦν τοῦ ποιουμένου καὶ τὸ μεταβάλλον τοῦ μεταβαλλομένου [int. αἰτίον], *De Gen. An.* ii. 6, 742 a 30 τὸ γὰρ ποιητικὸν καὶ γεννητικόν, ἧ τοιαῦτα, πρὸς τὸ ποιούμενόν ἐστι καὶ γεννώμενον.

a 4. ἐν τῇ κατὰ δύναμιν, int. ἀκοῇ which corresponds in this instance to τὸ πάσχον. Potential hearing must have that hearing actualised and the sound must take effect in it. τοῦ ποιητικοῦ καὶ κινήτικοῦ. It would not be safe to infer that the terms ποιητικὸν and κινήτικόν are identical: sometimes κίνησις is regarded as more extensive than ποίησις, e.g. *De Gen. et Corr.* i. 6, 323 a 20 τὸ κινεῖν ἐπὶ πλέον τοῦ ποιεῖν ἐστίν.

a 5. διὸ οὐκ ἀνάγκη τὸ κινεῖν κινεῖσθαι. Hence there may be a cause of motion which is itself unmoved, and such a cause for the motion of the whole universe we accordingly find described in *Metaph.* Δ., cc. 6, 7. There are other applications, e.g. the good as the end of action, *De A.* 433 b 15 sq.: cf. 434 a 16 sqq.

a 6. ἡ μὲν οὖν τοῦ ψοφητικοῦ ἐνέργειά ἐστι φόφος. This sentence applies to the special case of sound and hearing, the principle enunciated 426 a 4 of action taking effect in that which is being acted upon: ποιητικὸν becomes ψοφητικόν, τὸ πάσχον becomes τὸ ἀκουστικόν. It has been proposed to separate the sentence from διὸ οὐκ ἀνάγκη τὸ κινεῖν κινεῖσθαι by transposing a 9 ὥσπερ γὰρ ἡ ποίησις... a 11 ἐν τῷ αἰσθητικῷ to precede it. The objection to this is that the subject of a 12 ἀνόμασται is left obscure, for the verb is separated from its natural subject ἡ τοῦ αἰσθητικοῦ ἐνέργεια καὶ ἡ τοῦ αἰσθητικοῦ by the interposition of three sentences, which, if the transposition be adopted, must be regarded as a sort of parenthesis.

a 7. διττόν, namely, potential and actual: see 419 b 4 sq. cited above, *note* on 425 b 29, οὐκ ἀεὶ ψοφεῖ.

a 11. ἐν τῷ αἰσθητικῷ. This is a more general expression for ἐν τῷ πάσχοντι than ἐν τῇ κατὰ δύναμιν, which is used of ἀκοῇ 426 a 4.

a 13. ὅρασις γὰρ λέγεται. See the last *note* on 412 a 8.

a 14. καὶ γεῦσις, int. ἐνέργεια λέγεται.

a 15. ἡ δὲ τοῦ χυμοῦ, int. ἐνέργειά ἐστιν.

a 17. ἅμα φθεῖρεσθαι καὶ σώζεσθαι, "must be simultaneously destroyed or simultaneously maintained." They exist and cease to exist as actuality together. τὴν οὕτω λεγομένην, i.e. τὴν κατ' ἐνέργειαν λεγομένην, in contrast to τὰ κατὰ δύναμιν λεγόμενα 426 a 19.

a 19. οὐκ ἀνάγκη, int. ἅμα φθεῖρεσθαι καὶ σώζεσθαι.

a 20. οἱ πρότερον φυσιολόγοι. The assertion of the relativity of sensation, or at any rate the denial of its objective validity, was a consequence of more than one Pre-Socratic system, but it is uncertain how far the constructors of such systems recognised this. Cf. *Metaph.* Γ, c. 5, where A. has before him not only the views of Empedocles, Anaxagoras and Democritus, but also the maxim of Protagoras, which may be regarded as the outcome or result of previous physical speculation. See Plato, *Theaet.* 156 A—C, 159 C, D, Aristotle, *De Sensu*

4, 442 a 29 sqq., *Metaph.* Γ, c. 5, especially 1009 b 11—1011 a 2; cf. also *De A.* 404 a 28, Theophrastus, *De Sensibus* § 63. By the term φυσιολόγοι the earlier Ionian philosophers are often intended, e.g. *Metaph.* 986 b 14, but Empedocles is so designated *Poetic* 1447 b 19. As to Protagoras, though he was a professed humanist and not a natural philosopher, it seems reasonable to accept Trendl's explanation: Quoniam autem in hac quidem re Heracliti placita in suum usum convertit, haud inepte cum aliis physiologus dici potest (ed. 2, p. 358).

a 21. οὔτε λευκὸν... ὄψις. Cf. *De Gen. et Corr.* I. 2, 315 b 33 ὅμως δὲ τούτοις ἀλλοίωσιν καὶ γένεσιν ἐνδέχεται ποιεῖν, καθάπερ εἴρηται, τροπῇ καὶ διαθιγῇ μετακινούμεντα τὸ αὐτὸ καὶ ταῖς τῶν σχημάτων διαφοραῖς, ὅπερ ποιεῖ Δημόκριτος· διὸ καὶ χροῖαν οὐ φησιν εἶναι· τροπῇ γὰρ χρωματίζεσθαι. οὐδὲ χυμὸν. Cf. Theophr. *De Sensibus* § 69 ἀπλῶς δὲ τὸ μὲν σχῆμα [shape of the atoms] καθ' αὐτό ἐστι, τὸ δὲ γλυκὺ καὶ ὄλως τὸ αἰσθητὸν πρὸς ἄλλο καὶ ἐν ἄλλοις, ὥς φησιν [int. Δημόκριτος]. In § 64 Theophr. implies that it was only the atomic shapes which generate colour and flavour, which Democritus determined accurately πλὴν οὐχ ἀπάντων ἀποδίδωσι τὰς μορφάς, ἀλλὰ μᾶλλον τῶν χυλῶν καὶ τῶν χρωμάτων καὶ τούτων ἀκριβέστερον διορίζει τὰ περὶ τοὺς χυλοὺς ἀναφέροντες τὴν φαντασίαν πρὸς ἄνθρωπον [making the presentation to sense, viz. as flavour, relative to the individual percipient]. See also *Metaph.* 1047 a 4 οὔτε γὰρ ψυχρὸν οὔτε θερμὸν οὔτε γλυκὺ οὔτε ὄλως αἰσθητὸν οὐδὲν ἔσται μὴ αἰσθανομένων· ὥστε τὸν Πρωταγόρου λόγον συμβῆσεται λέγειν αὐτοῖς, where A. endeavours to fasten upon the Megarians the doctrine of Protagoras, just because they held ὅταν ἐνεργῇ μόνον δύνασθαι and denied the validity of any distinction between the potential and the actual, between a power to do and the act of doing.

a 24. ἐπὶ τούτων, i.e. ἐπὶ τοῦ κατ' ἐνεργειαν αἰσθητοῦ καὶ τῆς κατ' ἐνεργειαν αἰσθήσεως.

a 25. ἐπὶ δὲ τῶν ἐτέρων, "but it does not hold of potential sensation and potential sensible."

a 26. περὶ τῶν λεγομένων οὐχ ἀπλῶς. A. means τὸ αἰσθητικὸν and τὸ αἰσθητὸν. When we speak of these two things, it is necessary, A. thinks, to indicate in each case whether the term we use refers to τὸ κατ' ἐνεργειαν or to τὸ δυνάμει. Cf. *Metaph.* 988 b 14 ὥστε λέγειν τε καὶ μὴ λέγειν πως συμβαίνει αὐτοῖς τὰ γὰρ αἰτιῶν· οὐ γὰρ ἀπλῶς ἀλλὰ κατὰ συμβεβηκὸς λέγουσιν.

The general drift of the following section (426 a 27—b 7) is clear and may be presented in the paraphrase of Them., who characteristically passes over certain expressions which occasion great difficulty. "If the actual audible is identical with the actual hearing, then the sensations were rightly said to be λόγοι. For the mixed among sensibles are always more pleasant to us than the unmixed, e.g. in sounds αἱ συμφωνίαι, mixed flavours and blended colours. Now every mixture and blending is a λόγος which, when actually perceptible, becomes identical with sense-perception. Rightly and naturally (εἰκότως), then, sense-perception is λόγος as being identical with a λόγος (λόγῳ γὰρ ἡ αὐτή): untempered sounds and unmixed flavours, whether in excess or in defect, either fail to move sense or else destroy or pain it, for in excess they are no longer λόγοι nor blendings (κράσεις) nor συμφωνίαι" (84, 24 sqq. H., 155, 26 sqq. Sp.). Thus, as before, A. takes hearing as his typical sense and from the admitted proposition λόγος δ' ἡ συμφωνία, he concludes that hearing is a λόγος (426 a 29 ἀνάγκη καὶ τὴν ἀκοὴν λόγον τινὰ εἶναι), and, by induction, that every actual sensation is similarly a λόγος (b 3 ὥς λόγον τινὸς ὄντος τῆς αἰσθήσεως): and this is seen to be in complete agreement with the acknowledged fact that sensibles in excess destroy or pain the sense, while when duly tempered they are not only perceived but

give pleasure. It will be remembered that in *Eth. Nic.* 1174 b 14—1175 a 3 A. lays down that pleasure is the inseparable accompaniment of actual sensation when the faculty of sense is functioning normally upon its proper object, the appropriate sensible.

a 27. εἰ δὴ συμφωνία φωνή τίς ἐστιν. The text in this form is as old as the fifth century A.D. The evidence of Simpl. is explicit, 193, 32—194, 3; 194, 9. He informs us that Plutarch of Athens enquired whether ΕΙΔΗ should be read as three words, εἰ δ' ἡ, or as two, εἰ δὴ, and decided for the latter division of the letters. The same possibility of dividing ΔΗ into δ' ἡ is also considered and rejected by Philop. 475, 29 sqq., doubtless upon authority, though he does not name Plutarch. The objections of Syrianus and Ammonius as cited by Philop. 473, 2 sqq., 10 sqq. also imply that they had substantially the same text. Simpl. and Philop. agree that συμφωνία is predicate and therefore does not need the article and that φωνή τις (or, as they put it, ἡ τις φωνή) is the subject and means actual voice: Simpl. 194, 8 τὴν συμφωνίαν καλῶς κατηγορεῖ τῆς τινὸς φωνῆς, τοιούτεστι τῆς κατ' ἐνέργειαν, Philop. 475, 30 τίς δὲ ἐστὶν ἥτις φωνή, δηλονότι ἡ κατ' ἐνέργειαν· αὕτη γάρ ἐστιν ἡ συμμετρῶς ἔχουσα πρὸς τὴν κατ' ἐνέργειαν ἀκοήν. Trend., however, conjectured εἰ δ' ἡ φωνή συμφωνία τίς ἐστιν and this has been thought to derive support from Soph. 112, 32 and Priscianus Lydus 22, 24 cited in the critical notes. But, as Priscianus does not add τις to συμφωνία, his evidence is inconclusive. Philop. or Simpl., interpreting our present text as we know they did, would have thought themselves equally justified in saying ἡ φωνή συμφωνία εἴρηται παρὰ τῷ Ἀριστοτέλει.

Now, for the sake of argument, suppose we take the words in this way, "actual voice is a συμφωνία": our greatest difficulty is then to conceive exactly what is meant by συμφωνία. The word (1) may mean literally a concord of two or more sounds heard as one sound, or (2) it may have a wider meaning, in which it is scarcely to be distinguished from ἁρμονία or ὁμοιότης (cf. Plato, *Rep.* 401 D, *Symp.* 187 B), as agreement, tempering, harmony, of opposites, or at any rate contrasts, in general, and not specifically of sounds. With the first meaning it is clear that συμφωνία is φωνή τις and not conversely. To take the specific meaning (1) with φωνή as subject is absurd: it is not true that all actual voice is a concord in which two or more sounds are blended: some actual voice is, some is not. The ancient commentators, then, who insist that φωνή is the subject, give συμφωνία the more general meaning (2). Thus Simpl. 194, 16 τὸ κατ' ἐνέργειαν αἰσθητὸν ἐν συμφωνίᾳ τινὶ εἶναι βούλεται τῶν ἄκρων, ὥστε μήτε ἐλλείπειν μήτε ὑπερβάλλειν, ἔχειν δὲ μέσως πως· τοῦτο γὰρ ἡ συμφωνία, οἷον κρᾶσις τις οὔσα τῶν ἄκρων, ὁξέος μὲν καὶ βαρέος ἐν ἀκοῇ, λαμπρότητος δὲ καὶ ἀμυδρότητος ἐν ὄψει: here συμφωνία seems to be very little different from μεσότης. Philop. again says 472, 30 συμφωνίαν δὲ τὴν κοινωνίαν λέγει and Soph. 112, 33 συμφωνία τις καὶ συμμετρία and Prisc. Lyd. 22, 25 ἡ φωνή καὶ ἡ ἀκοή συμφωνήσασαι καὶ συναρμοσθεῖσαι ἀλλήλαις. Again, if συμφωνία bears the second meaning of agreement in general, the question arises; agreement of what with what? Of the sense with the sensible, says Philop. 472, 29 ἡ δὲ φωνή συμφωνία ἐστὶν οὐκ αὐτὴ πρὸς ἑαυτὴν ἀλλὰ πρὸς τὴν ἀκοήν. Similarly Prisc. Lyd. in the passage cited above and also 22, 29 ἡ ἐπειδὴ οὐκ ἐνεργεῖ καθ' ἑαυτὴν ἀλλ' ἐν τῇ πρὸς τὰ ἔξω ἀποτάσει καὶ τῇ πρὸς τὰ αἰσθητὰ σχέσει, δηλον ὡς οὐδὲ τὴν ἐνεργητικὴν ἔξει συμμετρίαν καθ' ἑαυτήν. Simplicius, on the other hand, as is shown in the passage cited, interpreted the agreement as one between the opposite extremes in the sensible, a view which is shared by Trend., who rejects the supposition that the word means "concentus inter vocem et auditum" and prefers to understand it as "concentus inter ipsa vocis quasi elementa, temperata quaedam acuti et gravis soni ratio, vocis

temperies." We may recall the treatment of the term *ἁρμονία* in I., c. 4, where, as A. explains it, it implies opposites, *σύνθεσις ἐναντίων* or *λόγος τῶν μειχθέντων*, i.e. *τῶν στοιχείων*. If we interpret *συμφωνία* here in an analogous manner as the combining of opposite elements, we avoid the absurdity of supposing that A. used the identity of sense and sensible as one of his premisses for establishing the conclusion that there is symmetry, agreement or consonance between them.

However, though *συμφωνία* might thus be taken as *κρᾶσις ἐναντίων* in general, the connexion with the sense of hearing and the repetition of the word below, b 6, incline me to adopt Torstrick's contention that the word has here its restricted meaning as a musical term. Cf. 424 a 31 *note*. As we there saw, *συμφωνία* is a sound which to the ear is a single object, although we know that in its production two or more actual sounds coalesce. It is thus a typical example of *μείξις* proper (see *note* on 407 b 32) and is so treated in *De Sensu* 7, 447 a 29—447 b 4, 447 b 11. A. does not believe that this coalescence is apparent only and that the two constituents of a chord are separately heard, although the interval between them is so short as to be imperceptible, *De Sensu* 7, 448 a 19 sqq. This was the theory of certain Pythagoreans, which A. rejects, because he regards an imperceptible moment of time as an impossibility. His own belief is that what is heard is neither of the constituent sounds, but a new single sound formed by their combination. Thus understood, it is quite evident that *συμφωνία* is a species of vocal sound. I take *συμφωνία* to be the subject, even without the article prefixed. Cf. e.g. 420 b 5 *ἡ φωνή* with 420 b 13 *φωνή* without the article. Torstrick admits that the conclusion of the syllogism does not follow from the premisses: and this cannot be denied. But no universal conclusion does follow from particular premisses.

a 28. *καὶ ἔστιν ὡς οὐχ ἐν τὸ αὐτό*. Torstrick bracketed these words as a marginal gloss. They are a needless interruption to the argument and the omission of *καὶ* between *ἐν* and *τὸ αὐτό* looks suspicious.

a 28. *λόγος δ' ἡ συμφωνία*, more precisely a *numerical ratio*. Cf. *Metaph.* 991 b 13 *εἰ δ' ὅτι λόγοι ἀριθμῶν τὰνταῦθα, οἷον ἡ συμφωνία*, 1092 b 13 *ἡ ὅτι [δ] λόγος ἡ συμφωνία ἀριθμῶν*, also *De A.* 424 a 30 *λύεται δὲ λόγος (τοῦτο δ' ἦν ἡ αἰσθησις), ὥσπερ καὶ ἡ συμφωνία καὶ ὁ τόνος κρουομένων σφόδρα τῶν χορδῶν*, *Probl.* XIX. 38, 921 a 2 *συμφωνία δὲ χαίρομεν ὅτι κρᾶσις ἐστὶ λόγον ἐχόντων ἐναντίων πρὸς ἀλλήλα. ὁ μὲν οὖν λόγος τάξις, ὃ ἦν φύσει ἡδύ. τὸ δὲ κεκραμένον τοῦ ἀκράτου πᾶν ἡδίων, ἀλλως τε καὶ (αἰσθητὸν δὲ) ἀμφοῖν τοῖν ἄκροις ἐξ ἴσου τὴν δύναμιν ἔχη (sic Jan) ἐν τῇ συμφωνίᾳ ὁ λόγος*.

a 29. *ἀνάγκη καὶ τὴν ἀκοὴν λόγον τινα εἶναι*. This is A.'s conclusion from the threefold protasis (2) actual sound and actual hearing are one and the same, (1) *συμφωνία* is a kind of vocal sound and (3) *ἡ συμφωνία* is *λόγος*. This is the order of Simplicius. The steps might be arranged as follows: (1) *συμφωνία* is a kind of vocal sound, (3) *ἡ συμφωνία* is *λόγος*, therefore a certain vocal sound is *λόγος*, but (2) actual sound and actual hearing are identical: therefore actual hearing, like actual sound, is a sort of *λόγος*. But the inference is fallacious. Obviously the premisses with their qualifications *τις* and *ἔστιν ὡς* do not bear out the general conclusion. Nor, if we adopt Trend.'s conjecture, is the case much better, for even then *ἔστιν ὡς* should precede *ἀνάγκη* in the conclusion. When we actually hear a concord, then on A.'s theory of sensation the *λόγος* or ratio of the audible sound is transmitted to the percipient sense-organ, for it is only there that it resides in actuality. But this proves nothing for sensations other than those of musical chords. I conjecture that it was their recognition of the fallacy in A.'s reasoning here which led the commentators to such arbitrary interpretations of the passage.



a 30. διὰ τοῦτο. Cf. 424 a 28 φανερόν δ' ἐκ τούτων sqq., where φθείρουσι τὰ αἰσθητήρια is parallel to φθείρει τὴν ἀκοήν here. A lesion of the organ prevents it from functioning.

a 31. ὁμοίως δὲ καὶ ἐν χυμοῖς τὴν γεῦσιν: supply φθείρει as predicate and τὸ ὑπερβάλλον γευστὸν for subject.

426 b 3. διὸ, because the sense is in some sort a ratio or proportion, λόγος τις. ἡδέα μὲν, int. τὰ αἰσθητὰ ἔστιν. The clause, which is answered by b 5 ὅλως δὲ μᾶλλον κτέ., is concessive, as pointed out by Mr Shorey, *A. J. Ph.* XXII. p. 159. To the question what sensibles give pleasure A. answers (1) those which are pure and unmixed, under certain conditions; but (2) in a still higher degree those which are composite, when divers elements have been fused into a unity. Cf. *Probl.* XIX. 38, 921 a 2 sqq. cited in second note on a 28 *supra*.

b 4. ἄγεται εἰς τὸν λόγον, i.e. in actual perception. When unmixed sensibles are perceived, they are brought before the bar of sense (cf. εἰς κρίσιν, εἰς δικαστήριον ἄγειν), which pronounces on their purity. Sense is the λόγος here and εἰς τὸν λόγον ἄγεσθαι = αἰσθητὰ γενέσθαι. A. uses ἄγειν of the transition from potential to actual (e.g. 417 b 10, *Eth. Nic.* 1153 a 12, *De Sensu* 4, 441 b 21, *Metaph.* 1051 a 29 sq.), which in the moment of perception affects simultaneously the αἰσθητικὸν and the αἰσθητόν. The process has been often described from the side of the subject as ὁμοίωσις: here it is described from the side of the object. τὸ ὅξυ. I am in doubt whether this word, which in our treatise is variously applied to the object of at least four of the five senses, hearing, smelling, taste and touch, ought to be taken, as in the rest of this section, to mean "shrill" or as "sharp to the taste," which better suits its association here with salt and sweet.

b 5. ἡδέα γὰρ τότε, i.e. when perceived as pure and unmixed. The commentators, however, persist in making this mean "when mixed in the proper proportion," which is the meaning they attach to ὅταν ἄγεται εἰς τὸν λόγον: *Simpl.* 195, 15 sqq., *Philop.* 477, 5 sqq. This destroys the antithesis to τὸ μεικτόν. Surely A. would have granted that it is possible to perceive qualities pure and unmixed and to derive pleasure from them. In *De Sensu*, cc. 3—5 he goes to great lengths in the analysis of χρώματα, ὀσμαι and χυμοὶ and with regard to these claims to have established the result that, as a rule, the greatest pleasure is derived from the composite sensibles.

b 5. μᾶλλον, int. ἡδύ. The only alternative is to make συμφωνία the predicate of τὸ μεικτόν, and this I reject, because συμφωνία is the typical example of τὸ μεικτόν. The omission of ὅλον, καθάπερ or the like is not wholly unexampled; cf. e.g. 425 b 9. But ἀκοή μὲν before συμφωνία would correspond exactly to ἀφή δὲ τὸ θερμαντόν κτέ. and must, I think, be mentally supplied.

b 6. ἀφή δὲ, int. μᾶλλον ἡδύ ἔστιν. τὸ θερμαντόν ἢ ψυκτόν, not the merely hot or cold, which, like τὸ ὅξυ ἢ τὸ βαρύ, would be ἀμγές, but the temperate, which is capable of being heated or cooled: cf. *Philop.* 477, 12 ὅρα πῶς εἶπεν τὸ θερμαντόν, τοὔτεστι τὸ δυνάμενον θερμανθῆναι, καὶ ψυκτόν τὸ δυνάμενον ψυχθῆναι. τότε γὰρ ἔστιν ἡδύ, ὅταν δύνῃται δέχεσθαι ἐπίτασιν· τὸ γὰρ ἄμετρον ψυχρὸν καὶ θερμὸν ἀνιάρων. With τὸ θερμαντόν ἢ ψυκτόν as an instance of τὸ μεικτόν the other members of the comparison are left unexpressed, "more pleasant than unmixed hot or unmixed cold." Thus understood, the words are in their right place and the proposal to transfer them to follow b 5 ἀμυρόν would be mischievous, for the shrill, the sweet, the salt are instances, not of τὸ μεικτόν, but of extreme qualities in isolation.

426 b 8—427 a 16. What we have said of the special senses and their special objects comes to this: each such sense has an organ or sensorium of its own and distinguishes or discerns the different qualities of its own proper

object. But such discrimination is not confined to the objects of the separate senses taken by themselves. When, e.g., we compare sweet and white and pronounce them different, this must be an act of sense, for the objects are sensible, not intelligible [§ 10]. Here it may be remarked that the flesh is not the final sensorium, or else comparison and discrimination would imply contact with the objects compared. But if to compare and distinguish is the work of sense, what instrument does the faculty therein employ? Can it employ the agency of two distinct special senses? No, for discrimination implies that both objects are presented to a single arbiter, and two distinct senses no more constitute such a single umpire than do two distinct persons [§ 11]. The unity of judgment presumes the unity of perception and thought. Moreover, not only must there be a single arbiter, but both the objects discriminated must be presented to it simultaneously. For the judgment "*A* is different from *B*" is a pronouncement about *B* as much as about *A*. Further, the coincidence in time is all-important: we must pronounce now and we must pronounce that *A* and *B* are different now [§ 12]. How can we conceive this to be done? Not by physical action, for since all change or movement implies two parts or factors, one the movent, the other the moved, physical changes opposite and simultaneous are impossible when by the use of the term indivisible we exclude a division of that which is moved, its division into these two parts or factors. Let us, then, start with an hypothesis. Suppose that which judges to be numerically indivisible and only logically separable into different parts [§ 13]. This is not possible. The same indivisible unity may potentially be a pair of opposites, but it cannot be in actuality both opposites at the same time, it cannot be simultaneously both white and black, it cannot simultaneously receive the forms of both white and black, as is required by our theory of sensation and thought [§ 14]. Suppose, then, that we use the analogy of the point, which is divisible in the sense that it can be considered as one or as two. That which judges, then, *quâ* indivisible, is single and judges its two objects simultaneously: but it may also be regarded as divisible, and then it is no longer one; the same point is used, we may say, twice in an instantaneous act. Treat the point as two: then it judges two objects with an instrument in some sort divided into two; treat the point as one, and it judges a single object and in an instantaneous act [§ 15].

The problem is very briefly, how can unity know diversity? It is a fact of experience that we pass such judgments of identity and difference: "Sweet is not white" or more generally "*A* is identical with, or different from, *B*." When *A* and *B* are sensibles, Aristotle refers the cognition to sense. But which sense? Each of the special senses is restricted to its own province or sphere. When the objects compared, as sweet and white, belong to different provinces, which is the arbiter, with what do we judge that sweet is not white? Sight takes no account of sweet, nor taste of white. The first suggestion is that we employ the two senses concerned as separate instruments: cf. *De Sensu* 7, 448 b 20—449 a 2, where the analogy of the two eyes which serve as the organ of vision is employed to render more plausible the supposition of a division of the αἰσθητικὸν in an indivisible act of perception.

Our first suggestion cannot be sustained: the judgment being one, the arbiter must be one; two separate senses would pronounce two opinions, not one. And if this should be met by modifying the hypothesis, and the two instruments of the single arbiter should be supposed to pass judgment on different objects at different times, A. points out that if the act of comparison is to be instantaneous, the simultaneous presentment of both objects is indis-

pensable. In the judgment "*A* is *now* not *B*" the "now" is not indifferent. The hypothesis of different instruments once excluded, it must be by a single indivisible instrument in an indivisible moment of time that we compare and distinguish diverse sensibles. Such comparison is part of the work of ἡ κοινὴ αἴσθησις, though the phrase is never used in this chapter. This faculty, then, τὸ πρῶτον or κοινὸν αἰσθητικόν, is one and indivisible. But the difficulty remains. This faculty undergoes a certain "motion" when sweet is perceived, the opposite "motion" when the sensible is bitter and a different "motion" when it is white. But simultaneous opposite motions are impossible in the same thing in the same instant of time, unless that thing be capable of division. This apparently insurmountable objection stated, A. offers two hypotheses and professes a preference for the second of the two (cf. *De Sensu* 7, 449 a 10—22, where apparently the same two hypotheses are presented). In the first the indivisible πρῶτον αἰσθητικόν is numerically and spatially one, but logically diverse, just as in the same object, numerically and spatially one, logical analysis discloses various qualities. But this fails to explain the simultaneous perception of contrary qualities. An object may simultaneously have opposite or diverse qualities (1) potentially, when the object is as yet actually neither, (2) actually, only if it is divisible: e.g. a material thing may be actually black in one part, actually white in another at the same moment, whereas the πρῶτον αἰσθητικόν is assumed to be an individual unity. A. meets this objection by the analogy of the point, which, though indivisible and devoid of parts, can be regarded either as one or as two.

This passage is the subject of an essay by Alex. Aphr. ἀπ. καὶ λύσ. III. 9, 94, 10 sqq. We also have his valuable commentary on *De Sensu*, c. 7, which discusses the similar problem, whether simultaneous perception of several objects is possible.

426 b 8. τοῦ ὑποκειμένου αἰσθητοῦ ἐστίν, "is related to, or concerned with, the sensible which falls under its ken," which is ὑποκείμενον in the sense explained above in first note on 425 b 14.

b 9. ὑπάρχουσα ἐν τῷ αἰσθητήρῳ. Cf. *supra* 424 a 24—28, where it is explained that faculty and organ are to one another as form to matter.

b 10. κρίνει: cf. 418 a 14, where the same thought is expressed. See Alex. ἀπ. καὶ λύσ. 94, 28 συστήσας, ὅτι ἡ αἰσθανομένη τινῶν καὶ τὰς διαφορὰς αὐτῶν κρίνει (οὐ γὰρ ἄλλης μὲν τὸ αἰσθάνεσθαι τινῶν, ἄλλης δὲ τὸ κρίνειν τὰς διαφορὰς αὐτῶν, καθ' ὅς ἐστιν αἰσθητά, ἀλλ' ἢ τε αἰσθανομένη τινῶν καὶ κρίνει αὐτά, καὶ ἡ κρίνουσα τὰς διαφορὰς αὐτῶν καὶ αἰσθάνεται αὐτῶν· ταῦτόν γὰρ κρίνειν τῷ αἰσθάνεσθαι· διὰ τοῦτο γὰρ καὶ ἡ αἴσθησις κρίσις τις εἶναι δοκεῖ). In Book II., however, sense was more often described as ἀλλοιοῦσθαι, πᾶσχειν, ἐνεργεῖν. In Book III. its discriminating and intellectual side, already noticed 418 a 14, 422 a 21, 424 a 5 sq., is brought out and its relationship to thought and knowledge is emphasised: cf. 432 a 16 τῷ τε κριτικῷ, ὁ διανοίας ἔργον ἐστὶ καὶ αἰσθήσεως. The same process may be viewed in one aspect as πάθος, in another as κρίσις. The position for which Alex. contends is the key to the whole subsequent discussion. Whatever judges two or more sensible objects must *ipso facto* co-instantaneously perceive them.

b 10. τὰς...διαφορὰς, "the specific differences of the appropriate sensible," e.g. taste pronounces upon sweet, bitter and the other varieties of flavour, which are constituted by these differences: cf. 418 a 13 sq., 420 a 26, 422 b 10, b 31 sq., 423 b 27 sq., 424 a 13.

b 13. ἕκαστον τῶν αἰσθητῶν πρὸς ἕκαστον κρίνομεν. A special sense discriminates only specific differences: white and black, though they present

ἐναντίωσις or μεγίστη διαφορά, are still in the same genus, colour, they are ὁμογενῆ. But discrimination transcends the limits of a single sense and its proper province, for qualities generically distinct are included under the same judgment. Cf. Them. 84, 38 H., 156, 16 Sp. αἰσθανόμεθα τοῖνυν οὐ μόνον τὸ λευκὸν τοῦ μέλανος διαφέρων, ἀλλὰ καὶ τὸ λευκὸν τοῦ γλυκέος. White and sweet are the objects of two different senses and not, like white and black, objects of the same sense.

b 14. καὶ αἰσθανόμεθα ὅτι διαφέρει, int. ἕκαστον τῶν αἰσθητῶν. The καὶ emphasises the verb αἰσθανόμεθα. Cf. Them. 85, 1 H., 156, 17 Sp. ταύτην οὖν τὴν διαφορὰν καθ' ἣν τὸ λευκὸν τοῦ γλυκέος διενήνοχεν τίς ἐστὶν ἡ κρίνουσα δύναμις; He is undoubtedly right in equating αἰσθάνεσθαι ὅτι διαφέρει with τὴν διαφορὰν κρίνειν. See above on b 10 κρίνει. The answer to this question takes up the rest of the present chapter. ἀνάγκη δὲ αἰσθῆσαι, int. αἰσθάνεσθαι ἡμᾶς ὅτι διαφέρει. Cf. *De Sensu* 6, 445 b 15 ἔτι τίνοι κρινοῦμεν ταῦτα ἢ γνωσόμεθα; ἡ τῷ νῷ. ἀλλ' οὐ νοητά, οὐδὲ νοεῖ ὁ νοῦς τὰ ἐκτὸς μὴ μετ' αἰσθήσεως.

b 15. αἰσθητὰ γὰρ ἐστίν. The reason given, though it seems decisive for A., would have appeared inconclusive to Plato: cf. *Theaet.* 185 A sqq.

b 16. τὸ ἔσχατον αἰσθητήριον, the immediate organ of sense in general, of the so-called common sense, more usually styled πρῶτον, κοινὸν or κύριον αἰσθητήριον. The words should not be restricted, as some restrict them, to the primary or single organ of touch. What from one point of view is first or primary is from another last or ultimate. Cf. 431 a 19 and see note on 422 b 22. The use of ἔσχατον to denote a peripheral organ is quite dissimilar: cf. also τοῦ ὁμματος τὸ ἔσχατον 423 b 22.

b 16. ἀνάγκη γὰρ ἦν. The natural interpretation of this passage is that flesh, the organ of the fundamental sense of touch, cannot be the immediate organ of the common sense, for, if it were, a judgment could only be passed by touching the object itself: nor indeed can a judgment involving qualities perceptible by different senses be formed by means of any of the organs of sense taken separately. The argument becomes consecutive enough so soon as it is recognised that A. here adopts the common opinion, so severely criticised in II., c. 11, that flesh is the organ of touch and that touch requires no medium: in fact, that A. uses precisely the same language as in 424 b 27—30, 435 a 17, *De Sensu* 7, 449 a 24. See Innes, *Class. Rev.* XVI. p. 463. Trend., failing to find the right clue to the sequence of thought, supposed that A. went out of his way to attack once more the views of the earlier physicists, e.g. Empedocles and Democritus, who with their theories of pores and emanations could conceive of sensation as a corporeal process taking effect in all cases through contact alone. Cf. *De Sensu* 4, 442 a 29 sqq. Them. also (85, 5—11 H., 156, 23—157, 2 Sp.) considered b 15 ἡ καὶ δῆλον...b 17 τὸ κρίνον as a digression. Simpl. 197, 11 sqq. and Philop. 482, 30 sqq., on the contrary, assume that the whole reference must be to the flesh as corporeal substance, σῶμα, of the central organ and not to flesh as the organ or inter-organic medium of the sense of touch. But after gravely informing us that when A. said σὰρξ he meant σῶμα, that when he said αἰσθητήριον he meant αἴσθησις, all the meaning they can find in the passage is simply that ἡ κοινὴ αἴσθησις, the αἰσθητικὴ ψυχὴ, is nothing corporeal. For the view of Neuhaeuser see next note. αὐτοῦ, in spite of the preceding αἰσθητήριον, must mean the object itself, τοῦ αἰσθητοῦ. Neuhaeuser, however, p. 81, thinks this would be too careless even for A. Hence he puts forward a different interpretation of b 15 ἡ καὶ δῆλον...b 17 τὸ κρίνον. By the word ἔσχατον, he says, A. means the last term of a series, which has no term beyond it, and in the question raised 422 b 34 πότερον δ' ἐστὶ τὸ αἰσθητήριον

ἐντός, ἢ οὐ, ἀλλ' εὐθέως ἢ σάρξ Neuhaeuser considers the second alternative, εὐθέως ἢ σάρξ, to be the same view as that here expressed by calling flesh τὸ ἔσχατον αἰσθητήριον. "Statt der früher gebrauchten Worte 'das Fleisch sei nicht sogleich (εὐθέως) das Organ des Gefühlsinnes,' sagt er hier, und zwar durchaus angemessen, 'das Fleisch sei nicht das letzte Organ des Gefühlsinnes,' d. h. sei nicht das Organ desselben in der Weise, dass sich hinter ihm in der Richtung nach Innen nicht noch ein anderes (das eigentliche Organ) befinde." The organ of the central sense must be in contact with the organs of the special senses, if it is to discriminate sensations. It follows that it must be in contact with every point of the flesh, for tactile sensations may occur at any point on the exterior surface of the body. Thus the assumption that flesh is τὸ ἔσχατον ἀπτικὸν αἰσθητήριον is reduced to an absurdity. Neuhaeuser remarks that the same argument would apply to the ultimate organs of the other senses, the central organ being no more to A. than τὸ κοινὸν μόριον τῶν αἰσθητηρίων ἀπάντων, τὸ κοινὸν αἰσθητήριον πάντων τῶν (or τῶν ἰδίων) αἰσθητηρίων, *De Somn.* 2, 455 a 19, *De Iuv.* 1, 467 b 28; 3, 469 a 12. Cf. Them. 85, 5 H., 156, 23 Sp. οὐδὲν οὖν θαυμαστόν, εἰ ἔμπροσθεν ἡμῖν ἐδόκει μὴ εἶναι τὴν ἀφήν ἐν σαρκί, ἀλλὰ τὴν σάρκα μὲν εἶναι μεταξύ τοῦ τε ἀπτοῦ καὶ τοῦ ἀπτικοῦ, ἢ εἴ τις καὶ βούλοιτο καλεῖν αὐτὴν αἰσθητήριον, ἀλλ' οὐτι γὰρ πρῶτον οὐδὲ ἐν ᾧ ἡ δύναμις ἐγκαθίστηται ἢ ἀπτική· προῖον γὰρ ὁ λόγος εὐρήσει μὴ περὶ τὴν σάρκα τοῦτο μόνον συμβεβηκέναι, ἀλλὰ καὶ περὶ τὰ λοιπὰ αἰσθητήρια, οἷον λέγω τὴν κόρην καὶ τοὺς διὰ τῶν ὥτων πόρους. Neuhaeuser closely follows Them. in the main outlines of his interpretation, but there is no indication how Them. took the words ἀπτόμενον αὐτοῦ.

b 17. τὸ κρίνον. Under this disguise, or as ἐν τι, ᾧ ἐπικρίνει ἡ ψυχὴ, A. refers to what is called *sensus communis*, ἡ κοινὴ αἴσθησις or τὸ πρῶτον αἰσθητικὸν of the *Parva Naturalia*. οὕτε δὴ. Post οὕτε alterum membrum per anacoluthiam quamdam omittitur ac post aliquod intervallum mutata constructione per οὐδὲ adiciitur (*Ind. Ar.* 546 a 8). We have to wait some time for οὐδέ: b 22 οὔτι μὲν οὖν repeats in substance the clause with οὕτε b 17 and οὔτι δ' οὐδ' comes at last in b 23 sq. κχωρισμένοις. In *De Sensu* 7, 448 b 17 sqq. the problem, is it possible to perceive several objects in the same instant of time, is first approached as formulated thus: (b 20) πρῶτον μὲν οὖν ἄρ' ὧδ' ἐνδέχεται, ἅμα μὲν, ἐτέρῳ δὲ τῆς ψυχῆς αἰσθάνεσθαι; (cf. in the recapitulation 449 a 5 εἰ δὲ δὴ ἄλλω μὲν γλυκεῖος ἄλλω δὲ λευκοῦ αἰσθάνεται ἡ ψυχὴ μέρει). This is a close parallel to κχωρισμένοις, but the subsequent words (448 b 21) καὶ οὐ τῷ ἀτόμῳ οὕτω δ' [ἢ οὕτω Ross] ἀτόμῳ ὥς παντὶ ὄντι συνεχεῖ indicate a somewhat different and possibly more developed form of the hypothesis, the separate parts of the sensitive soul being supposed continuous throughout. This might be the case if the peripheral organs were all connected with the central organ by ducts, πόροι, containing some fluid, e.g. breath or blood. The use of the indefinite neuter here, as in τίνι above b 14 and ἐνί τινι below b 18, is probably intentional: if any noun had to be supplied, it would be μορίοις or ὀργάνοις.

b 18. ἀλλὰ δεῖ ἐνί τινι ἁμῶς δῆλα εἶναι. It is not by two separate faculties that we can compare and discriminate sweet and white, there must be some single faculty to do this. Alex. Aphr. 95, 8—10 argues that, judgment and perception being inseparable, it is not possible for that which judges both objects to judge both without perceiving both. Now sight does not perceive sweet, nor taste colour. Cf. Lucretius iv. 486—496.

b 19. οὕτω μὲν γὰρ, "for at that rate," i.e. if we assume that the difference (e.g. between sweet and white) could be discerned by two different instruments of *sensus communis* judging separately. If this were so (says A.), the difference between the two could be just as well apprehended by two different percipients: which is absurd.

b 20. *δεῖ δὲ τὸ ἐν λέγειν*. The assumption of two principles as instruments judging separately being discarded, we reaffirm the necessity of a single judging principle (b 19 οὕτω μὲν...b 20 δεῖ δέ). For the use of *λέγειν* or *φάναι* to express a verdict or judgment cf. 431 a 8, *De Mem.* 1, 449 b 22 *δεῖ γὰρ ὅταν ἐνεργῇ κατὰ τὸ μνημονεύειν, οὕτως ἐν τῇ ψυχῇ λέγειν, ὅτι πρότερον τοῦτο ἤκουσεν ἢ ᾗσθετο ἢ ἐνόησεν, De Sensu* 7, 447 b 14 *καὶ εἰ μία τοίνυν ἡ αἴσθησις ἢ κατ' ἐνέργειαν, ἐν ἐκείνῃ ἐρεῖ, 447 b 24 sq.*

b 21. *ἕτερον γάρ, int. λέγει*, "for it does pronounce sweet to be different from white." *λέγει ἄρα τὸ αὐτὸ*. In this sentence *τὸ αὐτὸ* is the subject and means the same as *τὸ ἐν*, *λέγει* being used absolutely. In the previous sentence, the single deciding faculty is shown to be a necessary consequence of the argument: in this clause it is laid down as a fact which we may now accept.

b 22. *νοεῖ καὶ αἰσθάνεται*. Cf. 426 b 31 *τὴν αἴσθησιν ἢ τὴν νόησιν*, 427 a 9, 18 sq., 434 b 3 *νοῦν κριτικόν*. Discrimination being the characteristic of sensation and intellect alike, 432 a 16, it is not always easy to determine to which faculty a given judgment should be referred: cf. 429 b 13, 15, 17, 20 sq. Good and bad, the examples which directly follow, are of course *νοητά*, not *αἰσθητά*.

b 22 *ὅτι μὲν οὖν...23 τὰ κεχωρισμένα*. This resumes or re-states what was said above 426 b 17: see *note* ad loc.

b 24. *οὐδ' ἐν κεχωρισμένῳ χρόνῳ*. As it is one faculty, and not two, which compares and pronounces, so it is in one time and not in two that the comparison and pronouncement are made, i.e. simultaneously and not successively: cf. 426 b 28. If the first condition were not fulfilled, the action of two senses as parts or instruments of the judging faculty would be as independent as that of different percipients; if the second were not fulfilled, objects could not be pronounced to be *at one and the same time* distinct or identical. *ἐντεῦθεν, int. δηλὸν ἐστι*.

b 26. *καὶ θάτερον*. Fully written out this would be *τότε καὶ θάτερον λέγει ὅτι ἕτερον*. In the same instant, in which the judging faculty pronounces good to be different (from bad), it also pronounces bad to be different (from good).

b 26 (*οὐ κατὰ συμβεβηκός...28 καὶ ὅτι νῦν*). The whole of this is a digression introduced to explain in what sense *ὅτε* is and is not used in the foregoing sentence (b 25) *οὕτω καὶ ὅτε κτέ*. It is not to be understood (says A.) in the same sense as *νῦν* in the example indicated by the words *οἷον νῦν λέγω ὅτι ἕτερον, οὐ μέντοι ὅτι νῦν ἕτερον*, where the note of time is merely incidental (*κατὰ συμβεβηκός*); but it is to be understood as signifying that the difference upon which we are now pronouncing is perceived now; that is to say, the two qualities compared or contrasted (e.g. good and bad) must be simultaneously present to the judging faculty. Cf. Professor Bywater in *Journ. of Phil.* XVII. p. 56. "The argument in fact, if we may simplify its form by ignoring the accessories, is shortly this: *ὅτε θάτερον λέγει ὅτι ἕτερον, καὶ θάτερον* [scil. *λέγει ὅτι ἕτερον*]. ἄμα ἄρα [scil. *λέγει*]. The parenthetical note is merely thrown in to prevent a misconception to which the expression *ὅτε λέγει* might possibly give rise."

b 27. *νῦν λέγω...νῦν ἕτερον*. There is a similar precision *De Mem.* 2, 451 a 30 *μνημονεύει γὰρ νῦν ὃ εἶδεν ἢ ἔπαθε πρότερον, οὐχ ὃ νῦν ἔπαθε, νῦν μνημονεύει*.

b 28. *ἀλλ' οὕτω λέγει*. The *οὕτω* is explained by what follows: *καὶ νῦν* (int. *λέγει*) *καὶ ὅτι νῦν* (int. *ἕτερόν ἐστι, λέγει*). ἄμα ἄρα, int. *λέγει τὸ κρίνον ὅτι ἕτερόν ἐστι τὸ ἀγαθὸν τοῦ κακοῦ καὶ ὅτι ἕτερόν ἐστι τὸ κακὸν τοῦ ἀγαθοῦ*.

b 28. *ὥστε ἀχώριστον, int. τὸ κρίνόν ἐστι*. We here reach the main conclusion of the chapter. The remarks which follow from here to the end are an example of what has been called A.'s "subtilitatis luxuria."

b 29. *ἐν ἀχώριστῳ χρόνῳ, int. κρίνει*. These words, as b 30 sq. *ἐν ἀδιαίρετῳ χρόνῳ*, replace *ἄμα*. Cf. *De Sensu* 7, 448 b 18, where A. enquires *πότερον ἐνδέχεται*

ἄμα πλειόνων αἰσθάνεσθαι and adds (b 19) τὸ δ' ἄμα λέγω ἐν ἐνὶ καὶ ἀτόμῳ χρόνῳ πρὸς ἄλληλα.

b 29. ἀλλὰ μὴν ἀδύνατον. One objection is here considered. The two qualities compared are simultaneously present to the same perceiving and judging faculty. Since κρίνειν = αἰσθάνεσθαι (see *note* on 426 b 10, κρίνειν), two simultaneous processes go on in that ὑποκείμενον in which the faculty resides as λόγος or δύναμις: in short, in the central organ of sense. It would seem, then, that τὸ κρίνον would upon occasion be subject to different and perhaps contrary affections (here called motions) at one and the same time: which is impossible, unless it is divisible. (A. defines contrary motions as κινήσεις αἱ ἰστώσι καὶ παύουσιν ἀλλήλας *Phys.* VIII. 8, 262 a 6—8.) The same impossibility is assumed *De Sensu* 7, 448 a 1 ἐπὶ εἰ αἱ τῶν ἐναντίων κινήσεις ἐναντίαι, ἄμα δὲ τὰ ἐναντία ἐν τῷ αὐτῷ καὶ ἀτόμῳ οὐκ ἐνδέχεται ὑπάρχειν, ὑπὸ δὲ τὴν αἰσθησιν τὴν μίαν ἐναντία ἐστίν, οἷον γλυκὺ πικρῷ, οὐκ ἂν ἐνδέχοιτο αἰσθάνεσθαι ἄμα.

b 30. ἡ ἀδιαίρετον, "in so far as it is undivided," οὐ κατ' ἄλλο καὶ ἄλλο μέρους, *Simpl.* 198, 31, *Philop.* 484, 5 sq. If it were a body and extended, it could simultaneously apprehend black and white, namely, with different parts of itself. καὶ ἐν ἀδιαίρετῳ χρόνῳ, int. κινεῖται. Contrary motions in the same indivisible subject are not impossible, if they are successive, instead of simultaneous.

b 31. εἰ γὰρ γλυκύ, int. ἐστὶ τὸ αἰσθητόν.

427 a 1. ἐναντίως, int. κινεῖ τὴν αἰσθησιν ἢ τὴν νόησιν, which must also be understood with ἐτέρως. There can be no doubt that A. would include under νόησις in the wider sense imagination and memory: cf. 425 b 25 αἰσθήσεις καὶ φαντασίαι, 427 b 17 sqq., 433 a 10. But see 427 a 8 sq. *infra*.

a 2 ἄρ' οὖν ἄμα μὲν...3 κεχωρισμένον; A. is endeavouring to make clear how the single judging faculty judges its plurality of objects in an indivisible time. His speculations here must be carefully compared with the similar speculations *De Sensu* 7, 449 a 8 ἀνάγκη ἄρα ἐν τι εἶναι τῆς ψυχῆς, ᾧ ἅπαντα αἰσθάνεται...(a 10) ἄλλο δὲ γένος δι' ἄλλου. ἄρ' οὖν ἡ μὲν ἀδιαίρετόν ἐστι κατ' ἐνέργειαν, ἐν τὶ ἐστὶ τὸ αἰσθητικὸν γλυκέος καὶ λευκοῦ, ὅταν δὲ διαιρετὸν γένηται κατ' ἐνέργειαν, ἕτερον; ἢ ὥσπερ ἐπὶ τῶν πραγμάτων αὐτῶν ἐνδέχεται, οὕτως καὶ ἐπὶ τῆς ψυχῆς. τὸ γὰρ αὐτὸ καὶ ἐν ἀριθμῷ λευκὸν καὶ γλυκύ ἐστι, καὶ ἄλλα πολλὰ, εἰ μὴ χωριστὰ τὰ πάθη ἀλλήλων, ἀλλὰ τὸ εἶναι ἕτερον ἐκάστω. ὁμοίως τοῖνυν θετόν καὶ ἐπὶ τῆς ψυχῆς τὸ αὐτὸ καὶ ἐν εἶναι ἀριθμῷ τὸ αἰσθητικὸν πάντων, τῷ μέντοι εἶναι ἕτερον καὶ ἕτερον τῶν μὲν γένει τῶν δὲ εἶδει. ὥστε καὶ αἰσθάνοιτ' ἂν ἄμα τῷ αὐτῷ καὶ ἐνί, λόγῳ δ' οὐ τῷ αὐτῷ. By τὸ διαιρετὸν A. means the central sense regarded as divisible into the five special senses, while ἡ ἀδιαίρετον signifies the same viewed as αἰσθησις κοινή or μία αἰσθησις. Qualities opposite or heterogeneous have to be discriminated at the same time: how is this to be done? The first suggestion for a way out of the difficulty is to apply once more the antithesis of τόπῳ μὲν καὶ ἀριθμῷ ἐν (ἀδιαίρετον) καὶ ταῦτό, τῷ δ' εἶναι ἕτερον (διαιρετόν), locally and numerically one and indivisible, while in conception or essence different and divisible. In other words, is this one more instance of the line at once convex and concave? Will the formula help us? The next sentence is a development of the suggested way of escape, it shows us what the application of the formula will be.

a 5. ἡ οὐχ οἷον τε; By these words A. appears to reject the formula just proposed as inapplicable.

a 6 δυνάμει μὲν γὰρ...7 τῷ ἐνεργεῖσθαι διαιρετόν. Sense is either potential or actual 417 a 9 sqq., 428 a 6. In contrasting δύναμις in general with ἐνέργεια A. says *Μετὰρῆ*. 1051 a 10 τὸ μὲν οὖν δύνασθαι τὰναντία ἄμα ὑπάρχει, τὰ δ' ἐναντία ἄμα ἀδύνατον· καὶ τὰς ἐνεργείας δὲ ἄμα ἀδύνατον ὑπάρχειν, οἷον ὑγιαίνειν καὶ κάμ-

νειν. Here, as elsewhere, whether we are dealing with the material or the immaterial, with a sense-organ or a faculty, ἡ ἐντελέχεια χωρίζει, *Metaph.* 1039a 7. Potentially sense is each or both of opposite sensibles. This has been proved in detail. See, e.g., 418 b 26 sqq., 423 b 29 sqq. But in actuality this is no longer the case: the only way in which the same thing can simultaneously be, or receive the forms of, two opposites such as white and black is by becoming divided and so ceasing to be actually indivisible. The organ of a special sense is a material thing, extended, divisible, it can undergo the motion caused by white in one part of itself and simultaneously the motion caused by black in another part of itself. But such explanations are meaningless when applied to the immaterial, unextended, indivisible faculty, the form of the said organ. Cf. 424 a 26—28. See Philop. 484, 18—22.

a 8. ὥστ' οὐδὲ, int. οἶόν τε. τὰ εἶδη. Cf. 424 a 18, where, however, δέχεσθαι and not the somewhat unusual πάσχειν is employed: and for the process of thought 429 a 15, b 25, 431 b 29, 429 a 27 sq. Judging belongs to thought as much as to sense: cf. 426 b 22 οὕτω καὶ νοεῖ καὶ αἰσθάνεται.

a 9. τοιοῦτον, int. οἶον τὰ εἶδη πάσχειν or δέχεσθαι. There seems no *arrière pensée* here, though it is quite true that in 424 b 14—18 A. distinguishes between πάσχειν and αἰσθάνεσθαι.

a 9. ἀλλ' ὥσπερ. This remark is intended to introduce a second, amended and more satisfactory solution. See *Physics* IV. 11, 220 a 10 καὶ γὰρ ἡ στιγμὴ καὶ συνέχει τὸ μήκος καὶ ὀρίζει. ἔστι γὰρ τοῦ μὲν ἀρχὴ τοῦ δὲ τελευτῇ. ἀλλ' ὅταν μὲν οὕτω λαμβάνη τις ὡς δυοῖ χρώμενος τῇ μιᾷ, ἀνάγκη ἴσασθαι, εἰ ἔσται ἡ ἀρχὴ καὶ ἡ τελευτὴ ἡ αὐτὴ στιγμὴ; see also *ib.* IV. 13, 222 a 12 sq. From these passages we gather that any given point in a line may be regarded as dividing the line into two segments. The one point is the extremity of both these segments, at once the beginning of one and the end of the other: e.g. if *C* be any point on the line *AB*, *C* is at once the end of the line *AC* and the beginning of the line *CB*. Alex. Aphr. (96, 14 sqq.) understands the illustration to apply to the centre of a circle, which, though a single point, is still the extremity of an indefinite number of convergent radii. But the case I have given is the simplest and best fits the language of the text. In the point we thus find something which, while one and indivisible, yet has simultaneously different relations and is in a certain aspect divisible. So, too, the judging faculty of sense may be treated as at once single (αἰσθησις κοινὴ, μία αἰσθησις) and divisible.

a 10. ἦν καλοῦσι τινες στιγμὴν. I see no ground for interpreting this to mean anything else than the geometrical point: the context shows that σημεῖον or πέρασ might have been used (cf. 431 a 22 ὅρος): or, if A. had been dealing with the point in time, he would have called it the “now,” and it is quite certain that he would not have applied to the “now” the unqualified terms σημεῖον, πέρασ or ὅρος. Cf. Neuhäuser, p. 45.

a 10. ἢ μία ἢ δύο, ταύτη καὶ διαιρετῇ. This is Biehl's conjectural restoration. Bekker rightly felt that a relative ἢ must precede ταύτη and therefore rejected the reading ἢ μία ἢ δύο, which has the greatest authority, viz. E, vet. trans., Alex. Aphr. 94, 20: but he went too far when he replaced it by ἢ μία καὶ ἢ δύο, for the point, ἢ μία, “regarded solely as single,” is not divisible. It is divisible because it can be regarded at will not as single, but as double. Cf. *Metaph.* 1002 a 32 τὰς δὲ στιγμὰς καὶ τὰς γραμμὰς καὶ τὰς ἐπιφανείας οὐκ ἐνδέχεται οὔτε γίγνεσθαι οὔτε φθεῖρεσθαι, ὅτε μὲν οὕσας ὅτε δὲ οὐκ οὕσας. ὅταν γὰρ ἀπληται ἢ διαιρετῇ τὰ σώματα, ἅμα ὅτε μὲν μία ἀπτομένων, ὅτε δὲ δύο διαιρουμένων γίγνεται. ὥστ' οὔτε συγκειμένων ἔστιν ἀλλ' ἔφθαρται, δηρημένων τε εἰσὶν αἱ πρότερον οὐκ οὔσαι. οὐ γὰρ δὴ ἢ γ' ἀδιαίρετος στιγμή διηρέθῃ εἰς δύο.



a 11. ἄμα, int. κρίνει. Or, as A. tends to treat ἄμα sometimes as an adjective, sometimes as an adverb, we might supply κρίνόν ἐστι.

a 12. ἡ δὲ διαιρετὸν, οὐχ ἐν ὑπάρχει. According to Stapfer, *Studia*, p. 8, cod. E has διαιρετὸν ὑπάρχει δις τῷ, but a later hand has inserted οὐχ ἐν before δις and γὰρ before τῷ. Whether οὐχ ἐν comes before or after ὑπάρχει, the verb must be supplied a second time. Cf. note on 403 b 18.

a 12 δις γὰρ...13 ἄμα. Note the usual confusion between the illustration and the fact it is intended to illustrate. Cf., e.g., 402 b 6 sqq., 403 a 12 sqq. The geometer treats the single point *C* twice over, as the extremity both of the line *AC*, which it ends, and of the line *CB*, which it begins. The single judging faculty similarly treats its single object, e.g. the difference between sweet and white, twice over, for it cannot pronounce that sweet is not white without at the same time pronouncing that white is not sweet. Cf. 426 b 25 οὕτω καὶ ὅτε θάπερον λέγει ὅτι ἕτερον καὶ θάπερον.

a 13. δυὶ χρήται. Cf. *Phys.* IV. 11, 220 a 17 τῇ γὰρ μέσῃ σιγῇ ὥς δυὶ χρήσεται.

a 14. ἔστιν ὡς κεχωρισμένῳ. The dative gives a tolerable sense and has the support of Alex. Aphr. 94, 23 ἔστιν ὡς τῷ κεχωρισμένῳ. Of course it is an instrumentalative, like τίνι 426 b 14, as Trend. saw: quodammodo separato instrumento. Cf. *De Sensu* 7, 449 a 10 ἄλλο δὲ γένος δι' ἄλλον. I cannot accept M. Rodier's version "et ces choses sont séparées, comme elles peuvent l'être dans le divisé." Both ἔστιν ὡς and the singular κεχωρισμένῳ modify and correct the apparent inconsistency with 426 b 17 οὔτε δὴ κεχωρισμένοις and b 22 sq. Trend. was naturally dissatisfied with the text bequeathed to him by Bekker καὶ κεχωρισμένα ἐστὶν ὡς κεχωρισμένων, "et sunt diversa velut diversorum." He saw that ἔστιν ὡς must be taken together and remarked that it would be easier to substitute κεχωρισμένον (cf. Soph. 114, 38) for κεχωρισμένων. But, so long as A. is concerned to emphasise the unity of the judging faculty, he is more likely to say that the instrument it employs is "in some sense separated into two" than to concede so much of the faculty itself. Trend., according to Belger, was finally of opinion that <τῷ> κεχωρισμένῳ should be read with Alex. Aphr. Wallace, who himself held that the dative should be retained on the authority of Alex. Aphr. 94, 23 and Simpl. 201, 19, pointed out the possibility of taking κεχωρισμένῳ as dual.

a 14. ἡ δ' ἐνί, <ἐν> καὶ ἄμα. The text of the better MSS. E L, with which S V X agree, is ἡ δ' ἐνί καὶ ἄμα and Biehl accepts this, placing a comma after ἐνί. We have to decide whether this abbreviated version is genuine, in which case the authorities which prefix ἐν to ἐνί, beginning with Alex. Aphr., have made an arbitrary addition, or whether the abbreviated text is the result of accident, ἐν having dropped out either before or after ἐνί. I believe that Bekker was guided by a true instinct when he admitted both ἐν and ἐνί into the text. The case of the inferior MS. U is instructive: whereas E L S V X read ἐνί and omit ἐν, the first hand of U, according to Bekker, reads ἐν and omits ἐνί. But, in spite of Alexander and Simplicius, the probability that ἐν ἐνί is the right order is but slight. To balance the preceding clause ἡ μὲν οὖν δυὶ we require ἡ δ' ἐνί and then ἐν should follow to balance δύο κρίνει, which is exactly what Christ's emendation provides. The single object of the single judging faculty is, in short, identity or difference: the difference, e.g., between white and sweet, and this, A. has been insisting all along, is instantaneously perceived.

It is natural to enquire what advantage the second hypothesis, that of the point, possesses over the first: does it remove the difficulty of 426 b 29 sqq., the impossibility of contrary "motions" in an indivisible subject at the same instant

of time? The suggestion I have made in the second *note* on a 12 *supra* seems at first sight to increase this difficulty, since it implies that simultaneously judgment is passed on each of the two sensibles: "A is not B," "B is not A." The considerations adduced by Alex. Aphr. (97, 25 sqq.) do not help us, to whichever hypothesis we apply them. Very briefly, Alex. says that while the motion of perceiving white is contrary to the motion of perceiving black, the judgment "White is white" is not contrary to the simultaneous judgment "Black is black." Contrariety in the judgment only comes in when we simultaneously pronounce that white is both white and black. But the two judgments "White is white" and "Black is black" still imply the presence of two sensibles which affect sense, and, if these judgments are simultaneous, the simultaneous affection of sense by the two objects. Moreover Alex., who previously declared judgment and sensation to be inseparable (94, 32 ταῦτόν γὰρ κρίνειν τῷ αἰσθάνεσθαι, cf. the whole citation in *note* on 426 b 10 *supra*), now distinguishes παθεῖν from κρίνειν: 97, 27 παθεῖν μὲν γάρ τι τὸ αὐτὸ ἅμα τὰ ἐναντία ἀδύνατον...28 κρίναι δὲ ἅμα τὰ ἐναντία οὐδὲν ἀδυνατεῖ. The judgment which sense pronounces can be due to nothing but that process or affection or movement of sensation, which is a fact of experience: cf. 426 b 22 ὡς λέγει, οὕτω καὶ αἰσθάνεται. We are still as far as ever from learning what precisely is the "motion" of which the judgment of comparison "A is not B" is the result. Aristotle rigidly adheres to the assumptions made tacitly in this chapter, explicitly in *De Sensu*, c. 7: a single faculty, a single act; a single act, a single object: and his only way of escape is to convert the two sensibles present to the same judging faculty in the same instant of time into some sort of unity (e.g. white-black, sweet-white) compatible with the diversity implied in the co-existence of different relations.

### CHAPTER III.

This chapter might be entitled *περὶ φαντασίας*, but prior to 427 b 27, where something like a plan of procedure is enunciated, we find a series of preliminary remarks and criticisms of which the intention is not obvious. A. begins by associating sensation and thought by the common link of judgment or discrimination 427 a 18 sq., a 20. In the absence of any explicit statement until 427 b 27—29 the purpose of this association is not clear. Probably A. means that the critical or discriminating faculty has not been exhausted: there still remain over for discussion whatever mental processes, if any, involve discrimination and at the same time do not fall under sensation or have not been treated already. His own view, which we gather partly from this treatise and still more fully from the *Parva Naturalia* and other works, is that thought in the narrower sense, or intellection properly so called, is the chief of these processes, but that there are others subsidiary to thought, especially imagination and memory. But A.'s procedure is not at first dogmatic and categorical, although the much disputed sentence 427 b 14—16 may be said to anticipate his final result, and presupposes an acquaintance with this result, if it is to be thoroughly comprehended. On the contrary, A. proceeds tentatively on a somewhat circuitous route. He has to deal, not for the first time in this treatise, with the wide-spread opinion, endorsed by Pre-Socratic schools, that there is no essential difference between sensation and thought, both being material changes in the animal body. On this view was based the Empedoclean theory of perception by means of channels, *πόροι*, and the Atomistic hypothesis that all

perception, knowledge included, takes place by contact with *εἶδωλα* or material emanations from external objects. A. controverts such theories by an appeal to the fundamental conceptions of truth and error, which play so large a part in his logic. Probably the current views and the older Pre-Socratic philosophical theories would put *φαντασία* or *ὁ ἐμοὶ φαίνεται* on a level with *αἴσθησις* and *νόησις*, all alike being regarded as changes in the animal body due to impact of something external. It is unlikely that any sharp distinction would be drawn between them, so that what A. himself understands by *φαντασία*, viz. presentation, whether to sense or thought, whether in the presence or absence of an external object, would be identified, now with *αἴσθησις*, now with *νόησις*. In this way I am tempted to explain the very vague use of *νοεῖν* and *νόησις*, especially in the passage 427 b 16—29, in which a division of *νοεῖν* into *φαντασία* and *ὑπόληψις* seems, at any rate provisionally, to be admitted. Further on in the treatise A. is very careful to define what he means by *νοεῖν* 429 a 10 sq., 23. That he is not using the term so strictly in the present passage is seen at once when we find that *νοῦς* in this narrower sense is by implication only one species of the powers or faculties, *δυνάμεις ἢ ἔξεις*, which are brought into play in the process of thinking, *νοεῖν*, taken in the wider sense: cf. 427 b 27—29 with 428 a 1—5, 16—18. As before, 427 a 29 sqq., he assailed the position that there is no difference between sensation and thought by introducing *ἀπάτη*, so again A. seems to me to be tacitly controverting the position that *φαντασία* = *αἴσθησις* = *νόησις* (all three processes being, on Pre-Socratic assumptions, on the same footing as corporeal changes) by an appeal to *ὑπόληψις* 427 b 16, 17, 24 sq., 28, a term which, like *ἀπάτη*, involves the fundamental distinction between true and false. For, though on the whole *ὑπόληψις*, belief, stands nearest to *δόξα*, the weakest form of conviction, it is also predicated of the stronger forms *ἐπιστήμη* and *φρόνησις*. A. firmly held that not only the maxim of Protagoras, but also most of the Pre-Socratic theories of knowledge, were inconsistent with the distinction between true and false and led inevitably to the conclusion *πάν τὸ φαινόμενον ἀληθὲς εἶναι*. This first part of the chapter down to 427 b 26 is a desultory criticism of the earlier views, and the obscurity of certain parts of it is due to terms like *φρόνησις* and *νόησις*, *φρονεῖν* and *νοεῖν* being used sometimes with the same vagueness as by the older philosophers, sometimes in A.'s own technical sense.

**427 a 17—b 14.** The soul is defined by two powers, (1) the power of causing spatial motion and (2) the power of discerning or apprehending, which is shown both in sense and in thought. Indeed, that sense and thought are even identical is a popular opinion which has the support of some philosophers [§ 1]. This opinion is natural, where thought and sense are regarded as something corporeal, and like is held to be apprehended by like. But such a view ought properly to include, what is not forthcoming, an explanation of error also [§ 2]. Moreover, that sense and thought are not identical seems clear from the fact that the former is a property of all animals, the latter of but few. Again, thinking may be right or wrong, false or true, which is not the case with perception by sense [§ 3].

**427 a 17.** *ἐπεὶ δὲ*. As frequently happens when A. is lost in a labyrinth of parentheses, it seems doubtful where the apodosis begins or whether there is one at all. The obvious difficulties and the expedients available which occurred to Bonitz and Torstrik are precisely those which had already occurred to Alexander, Plutarch of Athens and the other Greek commentators, while the text is above suspicion. We may frankly admit anacoluthon with Alex. Aphr. (*apud* Philop. 489, 9), and it is only a modification of this view to hold, with

Torstrik, that A. ought to have written (and, Torstrik adds, probably did write) after a 19 αἰσθάνεσθαι something like σκεπτέον εἴ τι διαφέρει τὸ νοεῖν τοῦ αἰσθάνεσθαι, just as Argyropylos felt constrained to insert in his version *considerandum est si quid intersit inter intelligere et sentire*. Or, on the other hand, we may follow Plutarch (*apud* Philop. 489, 10) in making the apodosis begin at b 6 ὅτι μὲν οὖν οὐ ταῦτόν ἐστι. This solution was accepted by Simplicius and Philoponus, while Bonitz in *Arist. Stud.* II.—III., pp. 131—133 considers this to be the best expedient, if the idea of an anacoluthon is to be rejected. By the time A. had reached b 6 ὅτι μὲν οὖν it is very unlikely that he was conscious of any grammatical connexion between the new clause and a 17 ἐπεὶ δέ.

a 17. δύο διαφοραῖς. Cf. 403 b 25 τὸ ἐμφυχον δὴ τοῦ ἀνύχον δυοῖν μάλιστα διαφέρειν δοκεῖ, κινήσει τε καὶ τῷ αἰσθάνεσθαι: cf. also *infra* 432 a 15 sqq.

a 18. τῷ κρίνειν. Cf. Alex. Aphr., cited in *note* on κρίνει 426 b 10. This power of judging is obviously the common element in sense and thought: cf. *infra* 427 a 20 ἐν ἀμφοτέροις γὰρ τοῦτοις κρίνει. Whether we perceive or whether we think, we of necessity discriminate: we judge the thing known to be different from all other things and to be the same with itself.

a 19. δοκεῖ δέ. This ἐνδοξον or prevalent opinion is so far from being A.'s own that he proceeds to refute it below.

a 20. αἰσθάνεσθαι τι, "während manche das Denken für eine Art von Wahrnehmen halten," Bz. *Ar. Stud.* II.—III. 132. The same uncertainty recurs as to the construction of τι, which was pointed out in the *note* on πάσχειν τι 410 a 25. I prefer to regard it as a contained accusative and not as an attribute of the infinitive transformed into a noun, and I think there is some support for my view in κρίνει τι following. ἐν ἀμφοτέροις γὰρ τοῦτοις, i.e. τῷ αἰσθάνεσθαι on the one hand and τῷ νοεῖν καὶ φρονεῖν on the other: ἐν may well be instrumental.

a 21. τῶν ὄντων separated from τι, with which it must be taken; see *note* on hyperbaton 403 b 25. οἱ γε ἀρχαῖοι. Cf. 404 a 27 sqq., 405 a 9 sqq., 410 a 23—26, *Metaph.* 1009 b 12 sqq., where the opinion in question is attributed to Empedocles, Democritus, Parmenides, Homer; and to Anaxagoras on the dubious authority of an apophthegm. It is interesting to compare this list with that given in Plato, *Theaet.* 152 E sqq.

a 23. πρὸς παρεὸν γάρ. It is probable that Empedocles did not mean by this line (*frag.* 106 D) to assert the identity of thought with sense. The line is again cited *Metaph.* 1009 b 12—21, a passage which shows more clearly by what reasoning A. was led thus to interpret the words of Empedocles. Thought is perception, perception is change. Therefore the quality of our thought depends upon the change in our bodily state or the condition of the sense-organs (i.e. b 17 καὶ γὰρ Ἐμπεδοκλῆς μεταβάλλοντας τὴν ἔξιν μεταβάλλειν φησὶ τὴν φρόνησιν). This is not, however, the way in which the Greek commentators understand the passage. They make παρεὸν refer to the object presented (αἰσθητόν): thus Alex. Aphr. in *Metaph.* 306, 19 τουτέστι πρὸς τὸ παρεὸν γὰρ καὶ τὸ φαινόμενον ἡ φρόνησις γίνεται καὶ ἡ τοῦ ἀληθοῦς κατάληψις τοῖς ἀνθρώποις (μητὶς γὰρ ἡ φρόνησις): τοῦτο γὰρ ἴδιον αἰσθήσεως, Them. 87, 23 H., 161, 7 Sp. τοῦτο γὰρ αἰσθήσεως ἴδιον ὑπὸ τῶν αἰσθητῶν παρόντων κινεῖσθαι.

a 24. ὅθεν. This word is no part of the citation as given in a fuller and slightly different form *Metaph.* 1009 b 20 sq. ὅσσον τ' ἀλλοίοι μετέφυν, τόσον ἄρ σφισιν αἰεὶ | καὶ τὸ φρονεῖν ἀλλοία παρίστατο (*frag.* 108 D).

a 25. ἀλλοία. Cf. Homer, as quoted 404 a 30: κείτ' ἀλλοφρονέων, "he lay distraught." On this view of thought, it varies and fluctuates with the bodily condition. There are variations between man and man, and in the same man

at different times and under different conditions. *παρίσταται*, "comes to them," "arises in them."

a 26. τοῖος γὰρ νόος ἐστίν. From *Od.* XVIII. 136 sq.

τοῖος γὰρ νόος ἐστίν ἐπιχθονίων ἀνθρώπων  
οἷον ἐπ' ἡμᾶρ ἄγῃσι πατὴρ ἀνδρῶν τε θεῶν τε.

a 26. σωματικόν. Cf. 410 a 28 ὡς τοῖς σωματικοῖς στοιχείοις ἕκαστα γνωρίζεται of Empedocles: also 404 b 13—15.

a 28. ἐν τοῖς κατ' ἀρχὰς λόγοις. A clear reference to I, c. 2, where both views, viz., (1) that thought, as well as perception, is something corporeal, and (2) that we think, as well as perceive, like by like, are attributed to Empedocles or others 404 b 7 sqq., 405 b 11 sqq. For the form of the reference, cf. *Pol.* 1278 b 18 εἶρηται δὲ καὶ κατὰ τοὺς πρώτους λόγους.

427 b 1. οικειότερον γὰρ, int. τὸ ἡπατῆσθαι. Error, says A., is more truly natural to living things than right thinking. Cf. Theophr. *apud* Them. 108, 27 H., 200, 8 Sp. διὰ τί λήθῃ καὶ ἀπάτη καὶ ψεύδος;

b 3. ξνιοι λέγουσι, amongst them Democritus, to whom this opinion is attributed 404 a 28 τὸ γὰρ ἀληθὲς εἶναι τὸ φαινόμενον: see *note*. Cf. also *Metaph.* 1009 b 13 τὸ φαινόμενον κατὰ τὴν αἴσθησιν ἐξ ἀνάγκης ἀληθὲς εἶναι φασιν. In *De Caelo* III. 7, 306 a 16, A. himself asserts that τὸ φαινόμενον αἰεὶ κυρίως κατὰ τὴν αἴσθησιν is the net result or outcome, τέλος, by which, after all, any physical theory has to be verified. This, however, is merely an emphatic way of saying that theories must agree with facts.

b 4. τὴν τοῦ ἀνομοίου θέξιν. Upon the view that thought and perception, the means by which we acquire knowledge, are material processes in which like acts upon like, the action of unlike upon the bodily organ is the cause of error.

b 5. ἡ ἀπάτη καὶ ἡ ἐπιστήμη τῶν ἐναντίων ἡ αὐτή. The man who has knowledge or right views about one of two contraries has knowledge or right views about the other: cf. *note* on 411 a 4. So with error: the man who is mistaken or has wrong views about one of two contraries is *ipso facto* mistaken about the other. This is because contraries always belong to the same genus, of which they are the two most opposed species; e.g. black and white in the genus colour. To know white is to distinguish it from all the other colours and therefore from black. The point of the present passage is that what A. is fond of asserting about knowledge (cf. *Anal. Prior.* I. 1, 24 a 21, 36, 48 b 5, *Top.* I. 14, 105 b 5 sq., 23 sq., *Phys.* VIII. 1, 251 a 30, *Metaph.* 996 a 20 sq., *Eth. Nic.* 1129 a 13 sq., 17 sq.) holds good of error also.

b 6. ὅτι μὲν οὖν. Cf. *Philop.* 490, 15 τὸ δὲ οὖν διὰ τὴν μεταξυλογίαν κείται· ἔθος γὰρ εἶχον οἱ παλαιοὶ ἐν ταῖς μακραῖς ἀποδόσεσι προστιθέναι τὸ οὖν. See *note* on a 17 *supra* ἐπεὶ δέ.

b 7. καὶ τὸ φρονεῖν. Here A. appears to separate φρονεῖν from νοεῖν, the latter term being used in a vaguer manner, including φρόνησις, ἐπιστήμη, δόξα, as species under it, when the thinking is correct, and their opposites when it is erroneous. As a technical term, φρόνησις is restricted to thought which has a practical end in view: cf. *Eth. Nic.* 1140 b 4 (φρόνησιν) εἶναι ξένῃ ἀληθῇ μετὰ λόγον πρακτικὴν περὶ τὰ ἀνθρώπων ἀγαθὰ καὶ κακὰ; cf. *ib.* 1143 a 8 sq. But in *De A.* φρονεῖν hardly seems to be a technical term; cf. 417 b 8 and 429 a 10 γινώσκει τε ἡ ψυχὴ καὶ φρονεῖ (a general description of the functions of νοῦς). The term is appropriate in the discourse of those who held one thought to be as right as another.

b 8. τοῦ δὲ, int. τοῦ φρονεῖν. That φρόνησις of some sort is, in A.'s view, attributable to some animals appears from *Metaph.* 980 a 28 sqq. and also from *Eth. Nic.* 1141 a 26 διὸ καὶ τῶν θηρίων ἔνια φρόνιμά φασιν εἶναι, ὅσα περὶ τὸν αὐτῶν βίον ἔχοντα φαίνεται δύναμιν προνοητικὴν.

b 8. οὐδὲ τὸ νοεῖν. The nominative, after the insertion of a relative clause and then a parenthesis, is taken up and repeated in οὐδὲ τοῦτο at 427 b 11 οὐδὲ τοῦτο [δ'] ἐστὶ ταῦτὸ τῷ αἰσθάνεσθαι.

b 9. τὸ ὁρθῶς καὶ τὸ μὴ ὁρθῶς. Of thinking you can say that it is done "rightly" or "wrongly": you cannot say this of perceiving in the normal case, to which the term sense-perception strictly and properly belongs, τῶν ἰδίων αἰσθησῖς. But see 428 b 19 ὅτι ἀλλήλοισιν, *note*.

b 9 τὸ μὲν ὁρθῶς... 11 τάναντία τούτων. This is a parenthesis. Within it φρόνησις κτέ. are in apposition to τὸ μὲν ὁρθῶς (int. νοεῖν), τάναντία to τὸ δὲ μὴ ὁρθῶς (int. νοεῖν).

b 11. [δ']. If this quite superfluous δὲ be retained, it is a proof that the writer has lost the thread of his argument owing to the preceding parenthesis.

b 12. ἀλλ' ἀληθής. Cf. *supra* 418 a 11 λέγω δ' ἴδιον μὲν δ μὴ ἐνδέχεται ἐτέρῳ αἰσθῆσαι αἰσθάνεσθαι, καὶ περὶ δ μὴ ἐνδέχεται ἀπατηθῆναι, where see *note*.

b 14. ὃ μὴ καὶ λόγος, int. ὑπάρχει. That no animal devoid of reason can think, in the strict sense of the term, is implied in 415 a 6—11. Cf. *Eth. Nic.* 1097 b 33—1098 a 3.

**427 b 14—24.** Imagination is something distinct both from sense-perception and from thought. It presupposes the former (αἰσθησις) and is essential to belief (ὑπόληψις), but clearly thinking is not the same as believing. Thinking is under our own control, for we can form mental images at pleasure, as the system of mnemonics shows. We cannot, however, form opinions at will, for opinion must be either true or false. Again, the opinion that something terrible is imminent affects us powerfully, while a mere mental image affects us no more than the representation of an event in a painting [§ 4].

The subject of this section, the difference between imagination and opinion, is treated again below 428 a 18—b 9 and as though there had been no previous discussion of it here. Freudenthal called attention to this fact in his classic monograph *Ueber den Begriff des Wortes φαντασία bei Aristoteles*. The present passage 427 b 14 sqq. opens a distinct paragraph and should not be forced into too close a relation with the preceding sentences: hence I have put a full stop after λόγος 427 b 14.

427 b 14. φαντασία γὰρ ἕτερον. What are we to understand by γὰρ? In other words, why is φαντασία introduced for comparison just at this point? Freudenthal has suggested (p. 10) that it is to meet a possible objection to the last argument, an argument adduced to show that perception is distinct from thought. Suppose the objector to urge: "You say that thought is found in few animals, sensation in all; but then there is φαντασία, a species of sensation, which also, like thought, is not found in all animals." This objection is met, according to Freudenthal, by distinguishing imagination from both sense and belief, which is one species of thought, imagination itself being apparently the other, at least in the popular use of the term: cf. 427 b 28, where, however, δοκεῖ must not be pressed as if it were a strictly scientific view. Such ellipses as that assumed by this explanation are not uncommon in Aristotle. But this is an extreme case and the explanation is therefore questionable. A simpler one is given by Pacius. According to him, A. is still arguing that sense is distinct from thought, for imagination is different from both sense and thought; and, we may presume, two things which have a third thing intermediate between them must be distinct from one another. But the argument would then be wholly inconclusive, for we have merely ἕτερον, "distinct," not "intermediate" in the text; and it is not true that two things are proved to be distinct from each other because a third thing is distinct from both. If γὰρ must be pressed, I would suggest that the sentence may refer back to the resolution of νοεῖν into

φρόνησις, ἐπιστήμη and δόξα 427 b 9—11. The sense of the sentence introduced by γάρ would then be: "I have omitted φαντασία in this division, for it is distinct, not only from αἴσθησις, but also from διάνοια or τὸ νοεῖν." The whole context abundantly proves that νοεῖν and διανοεῖσθαι, νόησις and διάνοια are used indifferently. Memory is to A. one species of φαντασία, *De Mem.* 1, 451 a 2 sqq., 14 sqq. and in *Metaph.* 980 a 27 sqq., *Anal. Post.* II. 19, 99 b 34 sqq. A. traces a successive development from sensation, through memory, to experience, knowledge and art. In the scale of development sensation necessarily precedes imagination, as the latter necessarily precedes opinion and belief. Cf. *Them.* 88, 27 H., 163, 2 Sp. ἡπερ [int. φαντασία] ἀμείνων μὲν δύναμις τῆς αἰσθήσεως, πολὺ δὲ ὑποβεβηκυῖα τῆς διανοίας, καὶ ὥσπερ ἀμφοῖν ἐν μεθορίῳ κειμένη καὶ ἐπακολουθοῦσα μὲν τῇ αἰσθήσει, προλαμβάνουσα δὲ τὴν ὑπόληψιν.

b 15. αὐτὴ τε οὐ γίγνεται ἄνευ αἰσθήσεως. The subject is φαντασία. Cf. the definition given below 428 b 11—13, 14—16. Here αὐτὴ, "alone," *per se*, strengthens ἄνευ αἰσθήσεως.

b 16. ταύτης, i.e. φαντασίας.

b 16. ὑπόληψις. We should rather have expected διάνοια. What then is the relation between the two? It must be close, for in 429 a 23 ὑπολαμβάνει is obviously added to explain διανοεῖται. Bonitz (*Ind. Ar.* 186 a 60) says: ἡ διάνοια, ipsa actio cogitandi, distinguitur quidem ab ea sententia et persuasione, ad quam cogitando pervenitur...sed saepe διάνοια cum actione simul effectum (τὴν δόξαν, τὴν ὑπόληψιν) comprehendit. Thus διάνοια is the process of which ὑπόληψις is the result. Cf. *Metaph.* 981 a 5 ὅταν ἐκ πολλῶν τῆς ἐμπειρίας ἐννοημάτων μία καθόλου γένηται περὶ τῶν ὁμοίων ὑπόληψις, where Bonitz notes ὑπολαμβάνειν is "to suppose" or assume something as true, whether it be true or not. And so ὑπόληψις is a supposition or assumption or belief, whether true or false. Cf. *Metaph.* 1005 b 25 οὐκ ἔστι γὰρ ἀναγκαῖον, ἃ τις λέγει, ταῦτα καὶ ὑπολαμβάνειν. The term ὑπόληψις is not a technical term, and is chosen here because it will include ἐπιστήμη, δόξα and φρόνησις. Of these technical terms, δόξα is the one which most nearly approaches it, as "opinion" approaches to "belief." It is substituted for it 434 a 20 (cf. 434 a 17). Cf. *Eth. Nic.* 1139 b 17 ὑπολήψει γὰρ καὶ δόξῃ ἐνδέχεται διαψεῦδεσθαι, and also *Anal. Post.* I. 33, 89 a 2 λείπεται δόξαν εἶναι περὶ τὸ ἀληθές μὲν ἢ ψεῦδος, ἐνδεχόμενον δὲ καὶ ἄλλως ἔχειν. τοῦτο δ' ἔστιν ὑπόληψις τῆς ἀμέσου προτάσεως καὶ μὴ ἀναγκαίας, *ib.* 89 a 38 sqq. As Bonitz notes, ὑπολαμβάνειν is synonymous with τιθέναι *Metaph.* 998 a 20, 22 and ὑπόληψις with δόξα in the phrases *Metaph.* 1073 a 17 ἡ περὶ τὰς ἰδέας ὑπόληψις and 1078 b 12 ἡ περὶ τῶν εἰδῶν δόξα. *Them.* glosses δόξα and ὑπόληψις by the Stoic term συγκατάθεσις = assent (89, 1, 6, 21, 23 H., 163, 21, 29; 164, 18, 21 Sp.) and paraphrases δοξάζωμεν b 21 by ὑπολάβωμεν (89, 14 H., 164, 10 Sp.).

b 17. ἡ αὐτὴ νόησις καὶ ὑπόληψις. The perplexity which this passage has occasioned can, I think, be better removed by interpretation than by emendation. The words of the text naturally mean "νόησις is clearly not the same as ὑπόληψις." The objections to this are, first, that we have been dealing with φαντασία just before and, secondly, that A. goes on to support his assertion by adducing instances where φαντασία differs from δόξα. These objections do not seem insuperable. How closely ὑπόληψις and δόξα are related has been seen in the preceding note: it is as easy to show that there is a close relation between νόησις and φαντασία. The free play of the imagination repeatedly occurs as the first and most obvious instance of thought, νόησις, in the wider sense: cf. 432 b 30, *De Mem.* 1, 450 a 1—7. In the stricter sense of the terms, of course, φάντασμα is not νόημα itself, but its indispensable condition, 432 a 13 sq. But both νοεῖν and διανοεῖσθαι are unquestionably used, as in the passages just cited,

for *τίθεσθαι* πρὸ ὁμμάτων, which we describe as picturing or imagining and the Greeks as *φαίνεσθαι* or *φαντάζεσθαι*. There is nothing unreasonable, then, in the remark of Simpl. 206, 5 sq., Philop. 492, 24 that by *νόησις* A. means *φαντασία* and by *ὑπόληψις* either *ἡ λογικὴ γνῶσις* as a whole or one species of it, *δόξα*. Cf. Prisc. Lyd. 29, 3 *εἰοκασί δὲ οἱ ἄνδρες οὗτοι, καὶ ὁ Ἀριστοτέλης καὶ ὁ Θεόφραστος... νοῦν ἐνίοτε καὶ πᾶσαν τὴν λογικὴν προσαγορεύειν ζῶην, ὅπου γε καὶ μέχρι φαντασίας τὸ τοῦ νοῦ διατείνουσιν ὄνομα*.

However, doubt must have been felt long ago as to the exact interpretation of *νόησις*, for which Themistius in his paraphrase substitutes *φαντασία*: 88, 33 H., 163, 11 Sp. οὐ μὴν αἱ αὐταὶ εἰσι (the subject is the three faculties, *δυνάμεις*, into which Them. has just divided *ὑπόληψις*) *τῇ φαντασίᾳ*. ὅλως γὰρ τὸ ὑπολαβεῖν εἴτε δοξαστικῶς, εἴτε ἐπιστημονικῶς, εἴτε δὴ κατὰ φρόνησιν ἐτέρας ἐστὶ δυνάμεως καὶ οὐ φαντασίας. The substitution of *φαντασία* for *νόησις*, suggested in the margin of cod. U, appears in the Aldine edition and that of Sylburg and was finally accepted by Biehl in his *nova impressio* of 1896. The change is unnecessary, if *νόησις* can be taken in the way suggested above, corresponding to the lax use of *νοεῖν* and *νόημα*, e.g. in *De Mem.* Freudenthal met the difficulty in another way by making *ἡ φαντασία* the subject understood and *ἡ αὐτὴ νόησις* the predicate, and taking καὶ="as" after *ἡ αὐτὴ νόησις*: "that imagination is a different kind of thought from belief is clear." Below, b 28, τὸ νοεῖν includes both *φαντασία* and *ὑπόληψις*. It will be seen that Freudenthal extracts the same meaning as Simplicius or Themistius, but his construction of the words, though not impossible, is strained and unnatural.

Madvig proposed to bracket *νόησις*, and this is perhaps the simplest way to ensure that the comparison is between *φαντασία* and *ὑπόληψις*. On the other hand, Schneider's proposal to bracket *ἡ* is a quite inadequate remedy, for *αὐτῇ* would then mean as in b 15 "by itself." If Schneider supposed the meaning to be "this is not the same as thinking or conceiving," he should have conjectured, as he might perfectly well have done, *αὕτη* for *ἡ αὐτή*: cf. *note* on 425 b 7 *αὕτη* λευκοῦ. *τοῦτο μὲν γὰρ τὸ πῖθος*, int. τὸ νοεῖν, as I understand the passage; τὸ *φαντάζεσθαι*, according to others.

b 18. *ἐφ' ἡμῖν ἐστίν*. We are free to picture this or that to ourselves in thought, whenever we please (whether we can exclude an image or a thought from our mind at will is doubtful, nor does A. say that we can). Cf. 417 b 24 διὸ νοῆσαι μὲν ἐπ' αὐτῷ, ὅποταν βούληται. *πρὸ ὁμμάτων*. Cf. *τίθεται πρὸ ὁμμάτων* *De Mem.* I, 450 a 5, 6, where A. uses the phrase in connexion with the process which he there calls *νοεῖν*: (a 4) καὶ ὁ νοῶν ὡσαύτως, κἂν μὴ ποσὸν νοῇ, τίθεται πρὸ ὁμμάτων ποσόν, νοεῖ δ' οὐχ ἡ ποσόν.

b 19. *ἐν τοῖς μνημονικοῖς*. Some system of artificial aids to memory, *memoria technica*, was elaborated at an early date, if we may credit the well-known anecdote about Themistocles. Such a mnemonic art is mentioned by Xenophon, *Sympr.* IV. 62 οἷδα δὲ σε Ἰππία τῷ Ἡλείῳ, παρ' οὗ οὗτος καὶ τὸ μνημονικὸν ἔμαθεν' ἀφ' οὗ δὴ καὶ ἐρωτικώτερος γεγένηται διὰ τὸ ὅ τι ἂν καλὸν ἴδῃ μηδέποτε ἐπιλανθάνεσθαι, Cic. *De Or.* II. c. 86, § 351, 87, esp. §§ 357, 358; Claudius Ptolemaeus, *περὶ κριτηρίου καὶ ἡγεμονικοῦ*, 16; Sext. Emp. *P. H.* II. 222. For A. the locus classicus is *De Insomn.* I, 458 b 17 sqq. "So, too, in sleep we sometimes think of other things besides the objects mentally imaged. And this anyone would see who should give careful attention and try to remember after getting up. Indeed, cases have occurred in which persons have actually while dreaming seemed to be arranging by rules of mnemonic art the objects presented to them in the dream. For it frequently happens to them to set before the mind's eye, along with the dream, a new image to remember the dream by": 458 b 20 ἥδη δὲ τινες καὶ



ἐωράκασιν ἐνύπνια τοιαῦτα οἷον οἱ δοκοῦντες κατὰ τὸ μνημονικὸν παράγγελμα τίθεσθαι τὰ προβαλλόμενα· συμβαίνει γὰρ αὐτοῖς πολλάκις ἄλλο τι παρὰ τὸ ἐνύπνιον τίθεσθαι πρὸ ὁμμάτων εἰς τὸν τόπον φάντασμα. The τόποι μνημονικοὶ are mental pigeon-holes in which images (εἰδωλα), associated with the facts to be remembered, are supposed to be arranged. See, for illustration of this, the passage from Cic. *De Or.* (1.c.), and the anonymous treatise *Ad Herennium* III., c. 16, where there is an especially full and curious account of these *loci*.

b 20. δοξάζειν δ' οὐκ ἐφ' ἡμῖν. Opinion is not in our own power, as is imagining or thinking. In forming opinions, in judging, that is to say, that this is or is not so, we are fettered by facts, which we must take into account. Even an erroneous opinion takes account of facts, though it distorts or mistakes them (cf. Plato, *Theaet.* 186 sq.). There is a special reason for distinguishing δοξάζειν from φαντάζεσθαι. Δόξα and φαντασία, as being the nouns corresponding to δοκεῖ and φαίνεται, which are often synonymous, might themselves be synonymous, and in fact one use of φαντασία does seem to correspond with δόξα: cf. *Metaph.* 1062 b 33 τό γε μὴν ὁμοίως προσέχειν ταῖς δόξαις καὶ ταῖς φαντασίαις τῶν πρὸς αὐτοὺς διαμφισβητούντων εὔθες, where ταῖς φαντασίαις seems to be added as a synonym to bring ταῖς δόξαις into relation with the preceding φαίνεσθαι and φαινόμενον (=τὸ δοκοῦν ἐκάστω 1062 b 14). For this reference I am indebted to Miss Alford.

b 20. ἀνάγκη γάρ. An opinion, a judgment, a proposition must declare either what is true or what is false. The subject is probably τὸν δοξάζοντα. A mental picture makes no such declaration.

b 23. κατὰ δὲ τὴν φαντασίαν. The noun has here its technical sense, which differentiates the meaning of the phrase from that of 402 b 23: see *note* ad loc. ὡσαύτως ἔχομεν ὥσπερ ἂν εἰ θεώμενοι. Cf. Them. (89, 18 H., 164, 15 Sp.) οὐ συμπάσχομεν οὐδ' ὀτιοῦν, ἀλλ' ὥσπερ ἐν τοῖς πίναξι τὰ γεγραμμένα θεώμενοι πάσχομεν οὐδέν. We are as wholly unaffected by the mental image as if we were gazing at a scene depicted in a painting. Cf. 403 a 19—21, also 432 b 29—32, where b 30 οἷον πολλάκις διανοεῖται φοβερὸν τι ἢ ἡδὺ implies imagination (cf. 431 a 16 sq., 432 a 8).

427 b 24—428 a 5. Again, belief has several varieties, ἐπιστήμη, δόξα, φρόνησις and their opposites, which we are not here concerned to discriminate. But, as thought (τὸ νοεῖν) is distinct from sense-perception, αἰσθάνεσθαι, and is presumed to include imagination (φαντασία) and belief (ὑπόληψις), our best plan is first to fix the meaning of φαντασία before we discuss belief [§ 5]. Imagination may be described as a habit or faculty concerned with images, by which we judge and pronounce either truly or falsely. Of such habits or faculties there are four, αἰσθησις, δόξα, ἐπιστήμη, νοῦς [from which imagination must accordingly be distinguished] [§ 6].

This passage contains the plan of the discussion which follows to the end of the chapter. A. intends to fix what is meant by φαντασία before he passes on to νοεῖν proper. This was the more difficult because Plato had put on the word φαντασία a sense of his own, *Soph.* 263 E sqq. *ΞΕ.* Οὐκοῦν διάνοια μὲν καὶ λόγος ταῦτόν· πλὴν ὁ μὲν ἐντὸς τῆς ψυχῆς πρὸς αὐτὴν διάλογος ἄνευ φωνῆς γιγνόμενος τοῦτ' αὐτὸ ἡμῖν ἐπωνομάσθη, διάνοια; *ΘΕΑΙ.* Πάνυ μὲν οὖν. *ΞΕ.* Τὸ δέ γ' ἀπ' ἐκείνης ρεῖμα διὰ τοῦ στόματος ἰὼν μετὰ φθόγγου κέκληται λόγος. *ΘΕΑΙ.* Ἀληθῆ. *ΞΕ.* Καὶ μὴν ἐν λόγοις αὐτὸ ἴσμεν ὄν. *ΘΕΑΙ.* Τὸ ποῖον; *ΞΕ.* Φάσιν τε καὶ ἀπόφασιν. *ΘΕΑΙ.* Ἰσμεν. *ΞΕ.* Ὅταν οὖν τοῦτο ἐν ψυχῇ κατὰ διάνοιαν ἐγγίγνηται μετὰ συγῆς, πλὴν δόξης ἔχεις ὅ τι προσείπης αὐτό; *ΘΕΑΙ.* Καὶ πῶς; *ΞΕ.* Τί δ' ὅταν μὴ καθ' αὐτὴν ἀλλὰ δι' αἰσθήσεως παρῇ τῷ τὸ τοιοῦτον αὐ πάθος, ἀρ' οἷόν τε ὁρθῶς εἰπεῖν ἕτερόν τι πλὴν φαντασίαν; *ΘΕΑΙ.* Οὐδέν. *ΞΕ.* Οὐκοῦν ἐπείπερ λόγος

ἀληθὲς ἦν καὶ ψευδής, τούτων δ' ἐφάνη διάνοια μὲν αὐτῆς πρὸς ἑαυτὴν ψυχῆς διάλογος, δόξα δὲ διανοίας ἀποτελεύτησις, φαίνεται δὲ ὁ λέγομεν [int. φαντασία] σύμμιξις αἰσθήσεως καὶ δόξης, ἀνάγκη δὲ καὶ τούτων τῷ λόγῳ συγγενῶν ὄντων ψευδὴ τε αὐτῶν εἶναι καὶ ἐνίοτε εἶναι. ΘΕΑΙ. Πῶς δ' οὐ; A. returns to the current usage and makes it more precise. We must separate it from sense-perception and yet connect it with it. It is to A., in the main, decaying sense (ἀσθενὲς αἴσθησις), whether the retention be voluntary or involuntary: for, if we include the "after-image" (see *note* on 428 a 16) or the mental image produced during the presence of the sensation which produces it (428 b 1—4), it is not always ἐφ' ἡμῖν. He dismisses the meaning Plato would fix upon the word, viz. a judgment on present sensibles.

427 b 26. τάναντία τούτων. The opposite of knowledge is ignorance (ἄγνοια), and of wisdom, folly (ἀφροσύνη), while δόξα may be either true or false. ἕτερος ἕστω λόγος. Possibly *Eth. Nic.* 1139 b 15 sqq. is intended.

b 28. τούτου δὲ, int. τοῦ νοεῖν.

b 28. τὸ μὲν φαντασία δοκεῖ εἶναι τὸ δὲ ὑπόληψις. In every act of thought there is presentation on the one hand and assumption of objective reality on the other. At 403 a 8 sq. two alternatives are presented, τὸ νοεῖν is φαντασία τις or οὐκ ἄνευ φαντασίας: the former would accord with the views attributed to Democritus and other physicists who made no distinction between νοῦς and ψυχή. Very possibly the latter was a view current at the time, the process of thought being analysed into presentation and judgment upon it. Cf. 428 a 25 δόξα μετ' αἰσθήσεως and *note*. A.'s own doctrine is οὐδέποτε νοεῖ ἄνευ φαντάσματος 431 a 16 sq., 432 a 8, but at the same time φάντασμα is distinct from νόημα 432 a 13 sq. The student of post-Aristotelian philosophy will remember that Zeno analysed αἴσθησις into φαντασία and συγκατάθεσις, as mental presentation *plus* an act of assent. If ὑπόληψις, the common element of knowledge, opinion and wisdom (φρόνησις), is the assumption that the presentation is true, it is very like the mind's assent or belief.

b 29. περὶ φαντασίας διορίσαντας οὕτω. The emphasis is on the participle, "we must first define, i.e. mark the limits of, φαντασία and then pass on to treat of ὑπόληψις," or whatever is the rest of νοεῖν.

428 a 1. καθ' ἣν. This is added to distinguish the proper use of the term from the applications of it which A. stigmatises as metaphorical, or, it would be more correct to say, due to an extension of the term (see *note* on 428 a 2). Cf. Them. 89, 26 H., 164, 27 Sp. Ἀποσκευαζόμενοι...λέγομεν (πολλάκις μὲν γὰρ καὶ τὴν αἰσθησιν φαντασίαν καλοῦμεν, πολλάκις δὲ καὶ τὴν νόησιν), περὶ ἐκείνης λέγομεν τῆς φαντασίας, καθ' ἣν φάμεν φάντασμα τι ἡμῖν ἐγγίγνεσθαι, οἷον τύπον τινὰ καὶ μορφήν τοῦ αἰσθήματος ἐν τῇ ψυχῇ· αὕτη τοίνυν, ἣν κυρίως φαντασίαν καλοῦμεν, μία τις ἂν εἴη τῶν δυνάμεων καὶ τῶν ἔξεων τῶν κριτικῶν αἷς ἀληθεύομεν ἢ ψευδόμεθα. The antecedent to ἣν in our lemma is φαντασία itself, or rather τοῦτο, the relative δ being attracted to the gender of φαντασία. There is no need to supply either ἐξίς (or δύναμις) or (from 428 b 11) κίνησις. The sense to which the word φαντασία is here restricted is that of the power of calling up mental images, wherever this occurs, as in recollection, discursive thought and what is called the free play of the constructive imagination.

a 2. καὶ μὴ εἴ τι. And not whatever we, by an extension of the term, are in the habit of calling imagination. In this metaphorical or extended use φαντασία replaces in turn ἐπιστήμη, δόξα, αἴσθησις and νόησις. In fact, it may be said to mean πᾶν τὸ φαινόμενον or πάθος οἰοῦν τῶν ἐν τῇ ψυχῇ. The reason is that φαντασία means presentation, appearance, and any of the cognitive faculties, or again even sense-perception, may be described as presentative; that is, the

result they produce is something present to the soul, something that appears ( $\delta$  φαίνεται). In fact the wider, or what A. here calls the metaphorical, meaning is based on the felt connexion of φαντασία with φαίνεσθαι, while the more limited meaning is determined rather by the meaning of φαντάζεσθαι and φάντασμα. In English while we use the verb "imagine" in a wide sense and in connexion with any of the cognitive faculties indifferently, we never use it, still less the noun "imagination," of direct presentation to sense. In Latin on the contrary, "arbitrari" and "videri" were technical terms in the witness-box.

a 3. τούτων, i.e. among the various faculties already mentioned in this chapter. Four are enumerated in the next sentence. Imagination is then shown, 428 a 5—b 9, to be identical with no one of the four, but it takes rank with them as a separate faculty (δύναμις).

**428 a 5—16.** Imagination is not sensation. (1) Imagination occurs when there is neither actual nor potential sensation, e.g. in dreams. (2) Sensation (i.e. potential sensation) is always present; imagination is not. (3) Imagination is not found in all animals, e.g. not in the grub. It would be if it were the same as the actuality of sensation. (4) While sensations are always true, mental images are more often false than true. (5) The view that there is a real distinction between sensation and imagination is confirmed by linguistic usage [§ 7].

In spite of the arguments here adduced as if conclusive, A. sometimes speaks as if this were an open question: *De Insomn.* 1, 458 b 29 εἴτε δὴ ταῦτόν ἐστιν ἕτερον τὸ φανταστικὸν τῆς ψυχῆς καὶ τὸ αἰσθητικόν. Again, he speaks of an act of memory as an act of perception *De Mem.* 1, 450 b 16—18.

428 a 5. ὅτι μὲν οὖν οὐκ ἔστιν αἰσθησις, int. ἡ φαντασία.

a 6. οἶον ὄψις καὶ ὄρασις. Here ὄψις is the faculty, δύναμις, of sight, the power to see, ὄρασις is actual seeing: cf. 412 b 27 sqq., 426 a 12 sqq.

a 7. φαίνεται δέ τι, "there is an image" = φάντασμα τι ἐγγίγνεται. μηδετέρου ὑπάρχοντος, neither potential nor actual sense-perception. An exaggeration: see next note. A. might have said that, neither as actual nor as potential, is sensation to be identified with the imagination, which is active, not potential, in dreams: and this is what we find in *Philop.* 498, 13 διαίρει δὲ τὴν αἴσθησιν εἰς τὸ δυνάμει καὶ ἐνέργειᾳ καὶ λέγει ὅτι ἡ φαντασία οὔτε τῇ δυνάμει αἰσθήσει ταῦτόν ἐστιν οὔτε τῇ ἐνέργειᾳ, τῇ μὲν δυνάμει, ἐπεὶ ἐν ἐνεργουμένῳ σαφῶς ἐν τοῖς οὐκ ἐνέργειᾳ, τότε δὲ δυνάμει ἐστὶν ἡ αἴσθησις καὶ οὐκ ἐνέργειᾳ· ἀλλ' οὐδὲ τῇ ἐνέργειᾳ, ἐπεὶ οὐδέποτε ἂν ἐφανταζόμεθα ἐν τοῖς ὕπνοις (νῦν δὲ φανταζόμεθα), ἐπεὶ δὲ δυνάμει ἐστὶν ἐν τοῖς ὕπνοις [int. ἡ αἴσθησις] καὶ οὐκ ἐνέργειᾳ· ὥστε οὐ ταῦτόν ἡ φαντασία τῇ κατ' ἐνέργειαν αἰσθήσει. Cf. *Them.* 89, 36 sqq. H., 165, 12 sqq. Sp.

a 8. τὰ ἐν τοῖς ὕπνοις, int. φαινόμενα. In sleep there is potential sensation, the dormant power. There is, however, no actual sensation. In *De Somno* 3, 458 a 28 sleep is thus described: ὁ ὕπνος... τοῦ πρώτου αἰσθητηρίου κατάληψις [arrest] πρὸς τὸ μὴ δύνασθαι ἐνεργεῖν. The sleeper cannot actually see or hear: yet in dreams φαντασία is in active operation: cf. 428 a 16 φαίνεται καὶ μύουσιν ὁράματα. Here, as elsewhere in the chapter, A. is thinking of sight as the principal sense: cf. *De Insomn.* 1, 458 b 31 οὐ γίνεταί [int. τὸ φανταστικόν] ἀνευ τοῦ ὁρᾶν καὶ αἰσθάνεσθαι τι.

a 8 εἴτα... 10 ὑπάρχων. *Philop.* (498, 22, 25) breaks up this passage into two distinct arguments, the second beginning at a 9. εἰ δὲ τῇ ἐνέργειᾳ: but A.'s own indications εἴτα... εἴτα... ἔπειτα tend to show that he regarded a 8 εἴτα... 10 ὑπάρχων as a single argument. Imagination is neither (a) potential sensation, nor (b) actual sensation: not potential sensation, for that, the mere faculty of sense, is always present in the animal, it is a distinctive mark or characteristic of animals as contrasted with plants, whereas imagination is not so. The

question whether all animals, or whether certain animals, have or have not imagination is raised several times in the treatise, and even after the provisional solution of 434 a 1—5 it cannot be said to be an invariable accompaniment of animal life. It will be seen that αἰσθησις in 428 a 8 must be understood as meaning δυνάμει αἰσθησις. Freudenthal would alter αἰ to πᾶσι, which seems unnecessary with the above explanation: if, that is, αἰ=“universally,” in all species. As to the verbal contradiction between a 7 μηδετέρου ὑπάρχοντος and a 8 αἰ παρέσσι, it is the former words, and not the latter, which stand in need of correction.

a 9. εἰ δὲ τῇ ἐνεργείᾳ τὸ αὐτό, int. ἡ φαντασία ἐστίν. Here we pass to (δ), the proof that imagination is not actual sensation: for by τῇ ἐνεργείᾳ must be understood τῇ τῆς αἰσθήσεως ἐνεργείᾳ, τῇ κατ' ἐνέργειαν αἰσθήσει. See note on 428 b 13. “And supposing them [i.e. φαντασία and αἰσθησις] to be in their activities identical, all animals must have capacity for imagination, whereas this does not appear to be so, e.g. the ant, the bee, the grub do not possess it.”

a 10. οἷον μύρμηκι ἢ μελίττῃ ἢ σκώληκι. Thus understood, A. denies to these lower forms not any and every kind of imagination, but imagination as the developed faculty which he is here seeking to define. See note on 415 a 10. If A. here denies φαντασία to the ant and the bee as well as to the grub, we must bear in mind what he says in 434 a 1 “How can undeveloped or imperfect animals, which have no sensation except touch, have imagination? May we say that as their movements are vague and indeterminate, so, though they possess the powers in question (imagination and desire), it is only in a vague and indeterminate way?” In the *Metaphysics* 980 b 22 sqq. and in the *De Part. An.* II. 2, 648 a 5 sqq., bees are called φρόνιμα, or φρονιμώτερα ἐναίμων πολλῶν, and in the former passage memory is expressly attributed to them, while from *De Mem.* I, 450 a 22 sqq. it is clear that the possession of memory implies the possession of φαντασία. Cf. *ib.* 451 a 14 sqq., where memory is described as φαντάσματος, ὡς εἰκότος οὐ φάντασμα, ἕξις: further in *Hist. An.* I. 1, 488 a 7 sqq., bees and ants are said to be, like man, πολιτικὰ ζῷα. In view of these facts Torstrik refuses to accept the MS. text οἷον μύρμηκι ἢ μελίττῃ ἢ σκώληκι, where the bee and the ant are classed with the grub or larva, the lowest type of animal existence (*De Gen. An.* II. 1, 732 a 16 sqq.): at apīs certe et formica, prudentissima animalia, ex tam ignobili societate removenda sunt. Accordingly he reads οἷον μύρμηκι μὲν ἢ μελίττῃ, σκώληκι δ' οὐ, for which he finds authority in Them. (*ad loc.*) and Sophonias. The words of Them. are: 90, 6 H., 165, 23 Sp. φαντασία δὲ τοῖς μὲν τοῖς δ' οὐ, μύρμηκι μὲν ὥτως καὶ μελίττῃ καὶ πολλῶ μᾶλλον κυνὶ καὶ ἵππῳ καὶ ὅσα μετέχει αἰσθήσεως, σκώληκι δὲ οὐ, Soph. 55, 27 μύρμηξι μὲν γὰρ καὶ μελίτταις καὶ τοῖς ὁμοίοις, ἔτι δὲ καὶ τοῖς ὑπὲρ ταῦτα, καὶ ἀπλῶς οἷς τισιν οὐκ ἀόριστος οὐδ' ἀνεπίστροφος κίνησις, ἀνάγκη παρῆναι φαντασίαν, πρὸς ἣν ποιοῦνται τεταγμένῃ τὴν κίνησιν· σκώληκες δὲ καὶ μυῖαι καὶ ὅσα ἄλλα ἀτάκτως καὶ ἀόριστως ὀρῶνται κινούμενα καὶ μάλιστα τὰ ἐκ σήψεως ἐπετεῖως γινόμενα ἢ οὐ δοκοῦσιν ὅλως ἔχειν ἢ ἀμυδρὰν τινα. Unless Them. is correcting A., he can hardly have had our present text. Soph., on the other hand, is paraphrasing 415 a 10 sq. and drawing upon 434 a 4 sqq., and he says no more than Philop. in his notes on 413 b 22 and 414 b 33: 240, 11 μύρμηκες μὲν γὰρ καὶ μυῖαι καὶ πολλὰ τοιαῦτα ὅτι φαντασίαν ἔχει, πρόδηλον· ἴσασι γὰρ ἑαυτῶν τὰς καταδύσεις· σκώληκες δέ, ὡς ἐν τοῖς ἐξῆς ἐρεῖ, οὐ φαίνονται φαντασίαν ἔχοντες, 258, 32 μύρμηκες μὲν γὰρ καὶ μέλιτται καὶ τὰ τοιαῦτα ὁμολογουμένως μετέχει φαντασίας, σκώληκες δὲ καὶ ἀπλῶς ὅσα τὴν κίνησιν ἄτακτον ποιεῖται, φαντασίας οὐ μετέχει. Yet that Philoponus had before him in our present passage the text of the MSS. is plain from his comment: 498, 30 ὁ δὲ σκώληξ καὶ ὁ μύρμηξ εἰ καὶ

ἔχει φαντασίαν, ἀλλ' ἀμυδρὰν ταύτην ἔχει καὶ ἀδιάρθρωτον. Cf. Simpl. 308, 18 οὐκέτι μέντοι μύρμηκες καὶ μέλισσαι ἢ τὰ ἐρπετὰ ἢ νηκτά, οὐδ' ἔτι μᾶλλον τὰ ἀόριστον ἔχοντα τὴν φαντασίαν and 209, 21 μύρμηκι δὲ καὶ μελίσση καὶ ἐναργεστέρως σκώληκι οὐχὶ ἐκάστου ὠρισμένους, ἀλλὰ κοινότερον τροφῆς, ἢ εἰ καὶ τῆς ἐν τῷδε τῷ ἄλσει, ὥς ἐπὶ μελισσῶν, ἀλλ' οὐχὶ καὶ τῆς ἀπὸ τοῦ ἀτόμου τουδὶ τοῦ ἄνθους. The denial of φαντασία to the bee in particular seems not unnaturally to have puzzled the ancient commentators.

a 11. εἶτα αἱ μὲν, int. αἰσθήσεις. ἀληθεῖς αἰεὶ. Cf. *supra* 427 b 12, 418 a 12. Later in the chapter, 428 b 19, A. qualifies this αἰεὶ by the words ἢ ὅτι ὀλίγιστον ἔχουσα τὸ ψεῦδος.

a 12. ψευδεῖς. The causes of error will be investigated *infra* 428 b 18—30. Cf. in general *Metaph.* 1024 b 17—28, also first *note* on 402 b 23. As Simpl. remarks, 216, 4 sqq., the error is mainly due to the interval of time which has elapsed between the first presentation and the re-presentation. When every allowance is made, the statement in the text before us is surprising. It has been suggested that it is coloured by reminiscences of the discussion in the *Philebus*, where expectation of the future forms a large element in imaginative pictures, and Plato further contends (40 B) that the hopes and desires of the wicked are false, because they are never destined to be realised. On the whole I prefer the explanation of Simplicius and take αἱ πλείους ψευδεῖς to be a dialectical exaggeration for the more cautious, matter-of-fact πολλάκις ψεύδονται (cf. *supra* a 7 μηδετέρου ὑπάρχοντος). The later sceptics challenged the truth of all φαντασία, whether presentative or representative.

a 13. ὅταν ἐνεργῶμεν ἀκριβῶς, i.e. ὅταν ἀκριβῶς τῇ ἐνέργειᾳ αἰσθανώμεθα, when in actual sensation we give careful attention to the thing perceived, in other words, when we observe accurately.

a 14. τοῦτο, int. τὸ αἰσθητόν, the sensible object. ἀλλὰ μᾶλλον. If, with Torstrik, Madvig and Biehl, we reject the words τότε ἢ ἀληθὴς ἢ ψευδὴς as a gloss, the predicate to be supplied here will be λέγομεν ὅτι φαίνεται.

a 15. [τότε ἢ ἀληθὴς ἢ ψευδής], int. ἐστὶν ἡ αἴσθησις presumably. The words are confusing, whether we make αἴσθησις or φαντασία the subject. Again, the consideration thus introduced is irrelevant where, as here, the question is the distinction between αἴσθησις and φαντασία. I therefore concur in bracketing the words.

a 16. ὁράματα, "visual sensations." As αἴσθημα, which is τοῦ αἰσθανομένου πάθος *Metaph.* 1010 b 33, is the result of αἴσθησις, perception in general, so δῶμα is the result of ὄρασις, the special activity of seeing (cf. νόημα, νόησις). The phenomenon alluded to is probably that of the after-image mentioned above 425 b 24 sq. In *De Insomn.* 2, 459 b 5—20 A. says: "Thus the affection is not only in the organs of sense, while they are perceiving, it is in them also when they have ceased to perceive, in their deeper parts as well as at the surface. This is plainly evident in cases where the perception of an object is steadily continued. For when we turn the sense in another direction, the impression follows; as e.g. when we look away from the sun into darkness, for we are unable to see anything owing to the persistence in the eyes of the movement produced by the light. So, too, if we look for a long time at one colour, say white or yellow, the same kind of colour appears on whatever object the sight may be turned. So also if after gazing at the sun or any brilliant object, we close the eyes, we see if we observe closely, straight before us, wherever we happen to look, first the colour of the same sort, then it changes to dark red, then to purple, until it turns to black and disappears. The sensations derived from moving objects also suffer change, e.g. from rivers, especially from

those that have the swiftest current; for objects at rest appear to be moving." It is not necessary, then, to restrict the reference to the phenomena of dreams, as is done by Simpl. 210, 3 sq.

**428 a 16—b 9.** Again, imagination is not knowledge or thought, faculties which are infallible, for it may equally well be erroneous. It remains to see whether imagination is identical with opinion, which, like it, admits of error. No: for (1) opinion is attended by conviction, which no animals possess, though many of them have imagination. And (2) conviction, which thus attends opinion, presupposes persuasion by argument, and therefore reasoning (λόγος). But no animals reason [§ 8]. Clearly, then, imagination is not opinion accompanied by sensation, nor opinion following upon antecedent sensation, nor a complex or mixture of opinion and sensation. For, apart from the considerations above mentioned, the opinion required for any such combination would have to refer to the same object as the sensation. The result of such a theory would be that imagination is the direct thinking or conceiving of the object perceived [§ 9]. [Such a view, however, is untenable.] Images are often false. A man may have at one and the same time a false mental image and a quite true opinion or conception of the same object, e.g. of the sun. Thus, then, imagination is no one of the four faculties enumerated, nor is it any combination of them [§ 10].

**428 a 17.** τῶν δὲ ἀληθευόντων. Cf. *Anal. Post.* II. 19, 100 b 5 ἐπεὶ δὲ τῶν περὶ τὴν διάνοιαν ἔξεων, αἷς ἀληθεύομεν, αἱ μὲν αἰεὶ ἀληθεῖς εἰσὶν, αἱ δὲ ἐπιδέχονται τὸ ψεῦδος, οἷον δόξα καὶ λογισμός, ἀληθὴ δ' αἰεὶ ἐπιστήμη καὶ νοῦς.

**a 18.** ἰδεῖν εἰ δόξα, int. ἐστὶν ἡ φαντασία.

**a 22** ἔτι πάσῃ μὲν...24 λόγος δ' οὐ. The suspicions which induced Biehl to bracket this sentence come from Torstrik, who, always on the look out for double recensions, was as ready as Philoponus 501, 5 sq. to consider the two arguments separated by ἔτι as substantially identical. There is a similar uncertainty as to whether the sentence beginning with ἔτι in *Pol.* 1262 a 1, or that beginning ἔτι δ' in *De Mem.* 2, 451 a 25, is a repetition of what precedes or an independent argument, adding something new. See Freudenthal, *Rhein. Mus.* N. F. XXIV. (1869), p. 405. In the present passage something new is certainly added, viz. the dependence of πίστις upon λόγος. The first argument stated as a fact that animals are destitute of belief, the second shows the reason for the fact, viz. that belief, being reasoned conviction, implies reason. This is another instance of a sentence in which the μὲν clause is subordinate to a clause with δέ. The suspected words were read by all the Greek commentators: Them. 90, 23—25 H., 166, 17—21 Sp., Simpl. 211, 19—29, Philop. 501, 5 sq., Soph. 118, 37—119, 1.

**a 22.** ἀκολουθεῖ. This word, like ἔπεται, does not imply sequence in time, but logical concomitance, or a psychical relation of dependence. Cf. *ἐποῦ'* *ἄν*, 406 b 4.

**a 23.** πίστις δὲ τὸ πεπεισθαι. πίστις as defined in *Ind. Ar.* 595 b 8 sq. is persuasionis firmitas, sive ea ex argumentis et rationibus, sive ex sensu et experientia orta est, atque eae res quae ad efficiendam eam persuasionem conferunt. Here the word has the former subjective meaning "persuasionis firmitas" and the "belief" is "derived from reasonings." For the belief, based on the evidence of sense, cf. *Phys.* VIII. 8, 262 a 18 ἡ πίστις οὐ μόνον ἐπὶ τῆς αἰσθήσεως ἀλλὰ καὶ ἐπὶ τοῦ λόγου. There cannot be belief without persuasion and, apart from the direct evidence of the senses, there cannot be persuasion without reasoning. On this passage see Kampe, *Erkenntnistheorie*, pp. 271—273.

a 24. ἐνίοις. Cf. 428 a 9—11. λόγος δ' οὐ. Cf. 415 a 7 sqq., 433 a 11 sq., 434 a 5—7.

a 24 φανερόν τοίνυν...26 φαντασία ἂν εἴη. A. has three Platonic formulae before him, δόξα μετ' αἰσθήσεως from *Tim.* 52 A, the other two from the *Sophist*. There seems to be a needless precision in the last of the three, συμπλοκή δόξης καὶ αἰσθήσεως, following upon δόξα μετ' αἰσθήσεως. The reason is to be sought in the language of *Sophist* 264 B (cited above in summary of §§ 5, 6, p. 460) φαίνεται δὲ ὃ λέγομεν (i.e. what we mean by the term "φαίνεται," or "φαντασία," is) σύμμιξις αἰσθήσεως καὶ δόξης: in other words, φαντασία is with Plato a variety of δόξα, judgment. Aristotle however (as W. H. Thompson observes, *Journ. of Phil.* vol. VIII. p. 293) needs the term for another purpose and accordingly brushes Plato's distinction aside. At the same time, quoting from memory, he substitutes συμπλοκή for σύμμιξις. The second formula δόξα δι' αἰσθήσεως is also from the *Sophist* (264 A) ὅταν μὴ καθ' αὐτήν [i.e. τῇ ψυχῇ αὐτῇ καθ' αὐτήν] ἀλλὰ δι' αἰσθήσεως παρῇ τινὶ τὸ τοιοῦτον αὐ πάθος, ἀρ' οἷον τε ὁρθῶς εἰπεῖν ἕτερόν τι πλὴν φαντασίαν;

a 26. διὰ τε ταῦτα, "both for the foregoing reasons," i.e. the reasons urged against the identification of φαντασία with δόξα or with αἴσθησις.

a 27. καὶ δῆλον ὅτι, "and also because it is clear that." Unless we supply ὃν with δῆλον, thus forming an accusative absolute (in other words, if we supply ἐστί), the sentence will be slightly anacoluthic: "and also it is clear" for "and also because it is clear." But A. indulges in this as in other irregularities. For an exactly similar instance see *Phys.* IV. 11, 220 a 17 διὰ τε τὸ εἰρημένον (τῇ γὰρ μέσῃ στιγμή ὥς δυσὶ χρήσεται, ὥστε ἡρεμεῖν συμβήσεται), καὶ ἔτι φανερόν ὅτι κτέ. Cf. also *note* on 419 b 16. οὐκ ἄλλου τινός, "not of anything else, but of the thing perceived."

a 28. λέγω δ'. I mean, if φαντασία is a combination of δόξα and αἴσθησις at all, it is a combination of (for instance) the perception of white with a judgment or opinion relating to the same thing, white, and not to another thing, e.g. good. This is a fuller explanation of the views cited before, 428 a 25, and challenged by A. Trendelenburg proposes to read εἰ in place of ἐκ: "I mean whether."

428 b 1. τὸ οὖν φαίνεσθαι. Such is the consequence on the theory which A. is criticising, viz. that φαντασία is some combination of perception and opinion.

b 2. μὴ κατὰ συμβεβηκός. These words are added to include the qualification pointed out in a 28—31 *supra*. The account given in the *Sophist* comes to this: φαντασία is a direct opining of the object given in sensation, direct, not incidental, to exclude the case where the sensation refers to one quality of an object (white) and the opinion to another (good). In other words, φαίνεται μοι τοῦτο λευκὸν ὃν=δοξάζω τοῦτο ὅπερ αἰσθάνομαι λευκὸν εἶναι and not ἀγαθὸν εἶναι, in which case the opinion would refer *incidentally* to the same object as the sensation: cf. Them. 90, 35 H., 167, 5 Sp. οὐδὲ τοῦ αὐτοῦ μὲν ὑποκειμένου κατ' ἄλλο δὲ καὶ ἄλλο, οἷον εἰ τὸ ὑποκειμένου εἴη λευκὸν καὶ ἀγαθόν, τὴν μὲν δόξαν εἶναι περὶ αὐτοῦ καθὼ ἀγαθόν, τὴν δὲ αἴσθησιν καθὼ λευκόν· κατὰ συμβεβηκός γὰρ τοῦ αὐτοῦ ἢ δόξα τε καὶ ἢ αἴσθησις.

b 2. φαίνεται δὲ, int. τῷ αἰσθανομένῳ. This is clear from the example given. Here and in the next line φαίνεται is not equivalent to φάντασμα ἐστὶ, in the sense in which it was used, e.g. 428 a 7, but connotes a presentation, impression (or whatever it should be called) which A. regards as a form of αἴσθησις. Cf. *De Insomn.* I, 458 b 28 sqq., 2, 460 b 18 [cited p. 192 in *note* on 402 b 23 κατὰ τὴν φαντασίαν]. So the ancient commentators: Them. 91, 2 H., 167, 13 Sp. ὅταν... ἢ μὲν δόξα ἀληθεύῃ, ἢ αἴσθησις δὲ διαψεύδῃται, Simpl. 213, 15 ψευδὴς διὰ τὴν αἴσθησιν

(τοῦτο γὰρ δηλοῖ τὸ φαίνεται καὶ ψευδῇ), Philop. 505, 18 ἡ αἴσθησις ποδιαῖον τὸν ἥλιον ὁρᾷ.

b 3. ὑπόληψιν. The view, assumption or conception which the percipient has is correct, but what he opines directly, and not incidentally, does not agree with his perception: it cannot be said of him *δοξάζει ὅπερ αἰσθάνεται μὴ κατὰ συμβεβηκός*. ἔχει. The subject, not expressed, is ὁ ὑπολαμβάνων: cf. *note* on 403 a 22, ὀργίζηται.

b 4. πεπίστευται. If the reading *πεπίστευται δ' εἶναι μείζω* were right, the verb would be impersonal. It seems, however, more natural for A. to write *πεπίστευται μείζων* (int. ἥλιος) or else *πέπειυσται* (int. *τις*) *μείζω*. The scribes seem to have felt this, as the variants show (see critical *notes*). *μείζων τῆς οἰκουμένης*. Cf. *Meteor.* I. 8, 345 b 1 *εἰ καθάπερ δέικνυται ἐν τοῖς περὶ ἀστρολογίαν θεωρήμασιν, οὕτως ἔχει, καὶ τό τε τοῦ ἡλίου μέγεθος μείζον ἐστὶν ἢ τὸ τῆς γῆς*, and *De Insomni.* I, 458 b 28 *καὶ ὑγαίνουσι δὲ καὶ εἰδῶσιν ὅμως ὁ ἥλιος ποδιαῖος εἶναι δοκεῖ*: also *ib.* 2, 460 b 18.

b 4. συμβαίνει οὖν. Here then sensation (b 2, 3 *φαίνεται*) and opinion (b 3 ὑπόληψιν, b 4 *πεπίστευται*) relative to the same object are at variance. Upon the theory we are criticising, that of the *Sophist*, how is this to be explained? And how can we combine an opinion which is true with a sensation which is false into that *σύμμιξις αἰσθήσεως καὶ δόξης* which the theory asserts *φαντασία* to be? Two explanations suggest themselves. Either the percipient subject without forgetting or conversion by argument must relinquish his former correct opinion, while the object remains unaltered, and exchange it for the false opinion, which conforms to the presentation of sense (this we shall see is impossible); or, if he retains his former opinion at the same time that he *δοξάζει ὅπερ αἰσθάνεται*, the same opinion is both true and false. A parallel passage is *Anal. Post.* I. 6, 74 b 5 sqq. The syllogism must start from premisses which are not only true, but necessarily true. Unless we can state the reason for the conclusion, τὸ διότι, that is, unless the middle term, by reason of which the conclusion is necessarily true, be predicated as necessary, we have not demonstrated the conclusion. Nor indeed do we know it scientifically. The middle term, not being necessary, may vanish, while the conclusion to which it was supposed to lead abides: 74 b 30 οὐ γὰρ ἐστὶ τοῦτο [the conclusion] διὰ τὸ μέσον· τὸ μὲν γὰρ ἐνδέχεται μὴ εἶναι, τὸ δὲ συμπέρασμα ἀναγκαῖον. ἔτι εἴ τις μὴ οἶδε νῦν ἔχων τὸν λόγον καὶ σωζόμενος, σωζομένου τοῦ πράγματος, μὴ ἐπιλελησμένος, οὐδὲ πρότερον ᾔδει. φθαρείη δ' ἂν τὸ μέσον, εἰ μὴ ἀναγκαῖον. ὥστε ἔξει μὲν τὸν λόγον σωζόμενος σωζομένου τοῦ πράγματος, οὐκ οἶδε δέ. οὐδ' ἄρα πρότερον ᾔδει. εἰ δὲ μὴ φθαρταί, ἐνδέχεται δὲ φθαρῆναι, τὸ συμβαίνειν ἂν εἴη δυνατὸν καὶ ἐνδεχόμενον. ἀλλ' ἔστιν ἀδύνατον οὕτως ἔχοντα εἰδέναι. A different case is considered *Anal. Prior.* II. 21, 66 b 19 sqq., viz., a mistaken inference due to a false supposition respecting the premisses of a syllogism, κατὰ τὴν ὑπόληψιν συμβαίνει γίνεσθαι τὴν ἀπάτην: cf. 66 b 29 ἅμα γὰρ εἴσεται τε καὶ οὐχ ὑπολήψεται ὑπάρχειν.

b 7. τὴν αὐτὴν, int. δόξαν. By this δόξα Simpl. understood the resulting *φαντασία*: 213, 6 *συμβήσεται τὴν ἐξ ἀμφοῖν κατὰ συμπλοκὴν συστάσαν φαντασίαν τὴν αὐτὴν ἅμα τε ἀληθὴ καὶ ψευδῇ γίνεσθαι, εἰ μὴ ἄρα μεταπίπτειν τις καὶ γίνεσθαι ψευδῇ θεῖτο καὶ τὴν δόξαν*. But, as Simplicius goes on to say, the false presentation does not become true, nor again does our former true opinion become false, unless by a change either in us who opine or in the object, that is, in the example, the sun. The sameness of the opinion consists in its being the opinion of the same man at one and the same time; and what A. should have said is, "we shall have the same man holding at one and the same time a true and a false opinion regarding the same thing."



b 8. *ψευδὴς ἐγίνετο, ὅτε λάθοι.* Opinions (as we saw) become false instead of true as often as, unknown to the observer, the object observed undergoes some change: as, for instance, when a man who, when last observed, was sitting, has risen up and is standing. In this case the opinion that he is still sitting is no longer true, but false (cf. *Categ.* 5, 4 a 26 sq.). This parenthetical remark rounds off the enumeration of possible grounds for a change of opinion; forgetfulness, conversion by argument and change in the object perceived. Philop. (505, 26 sq.), in deference to *Anal. Post.* I. 6, 74 b 33, 35 *σωζόμενος*, introduces a fourth ground, viz. a change not further specified in the man himself who opines: the observer might approach the object or he might change from health to sickness. It is important, then, to postulate that he, as well as the object, should remain constant. Cf. 422 b 8—10 and *Metaφh.* 1010 b 21 *λέγω δ' οἶον ὁ μὲν αὐτοῖς οἶνος δόξειεν ἂν ἢ μεταβαλὼν ἢ τοῦ σώματος μεταβαλόντος ὅτε μὲν εἶναι γλυκύς ὅτε δὲ οὐ γλυκύς.*

**428 b 10—429 a 9.** Our own explanation of *φαντασία* assumes (1) that one motion may generate another, (2) that imagination, which is commonly held to be a motion, is not independent of sensation, occurs only in sentient beings and with regard to sensibles and (3) especially that the movement, or rather act, of sensation may generate a subsequent, secondary movement, which must resemble the original movement of sensation. If this be granted, then the subsequent movement postulated satisfies the conditions required. It is dependent on sensation, the possession of it makes its possessor act and be acted upon in various ways; it may be true or false [§ 11]. The reason why it can be true or false is as follows. The subsequent movement, generated by actual sensation, will differ in kind, according to the nature of the sensible object which has produced the original movement, that is, according as the percept is (1) a special sensible quality (*ἴδιον*); (2) a thing which happens to possess such quality (*συμβεβηκός*, *ᾧ ὑπάρχει τὸ ἴδιον*) or (3) one of the "common sensibles" (*κοινόν*) [§ 12]. The movement and consequently the mental image produced by (1) is true during the presence of the sensible object which produces it. In the images produced by (2) or (3) there may be falsehood or error, especially if the object is perceived from a distance. Hence *φαντασία* may be defined as a movement consequent upon and resulting from the movement of actual sensation [§ 13]. Its name *φαντασία* connects it with *φάος*, light, and therefore with sight, the most important of the senses [§ 14]. The persistence of mental images and their similarity to sense-perception will account for many of the actions of animals, which are without reason, and of men in whom reason is obscured by emotion, disease or sleep [§ 15].

**428 b 10.** *ἀλλ' ἐπαδῇ.* This is the first of a series of protases of which the apodosis comes at *εἴη ἂν αὕτη* 428 b 14. So *Simpl.* 214, 30—37.

b 10. *κινηθέντος τοῦδι κινεῖσθαι ἕτερον ὑπὸ τούτου.* Cf. *Phys.* VIII. 5, 256 a 4 sqq., where the theory of the transmission of motion through a series of *κινούμενα* or intermediaries is exemplified by the stick in a man's hand which moves the stone. The present application supposes sensation, which is one motion, to generate a secondary or subsequent motion *ἐν τοῖς αἰσθητηρίοις*, which is the mental image, exactly as the motion of the stone is generated by the motion of the stick. The sensible object is the cause of the motion which is sensation; and this latter in turn is the cause of the motion which is *φαντασία*: or, as *Them.* (92, 11 H., 169, 23 Sp.) puts it, *ὅπερ τὸ αἰσθητὸν τῇ αἰσθήσει, τοῦτο ἡ κατ' ἐνέργειαν αἰσθησις τῇ φαντασίᾳ.*

b 12. *ἀλλ' αἰσθανομένοις.* The participle has a limiting effect, "solely in sentient beings." *ὧν*, int. *τούτων* *ὧν*, neuter. The genitive is a genitive of

relation. Imagination (we are told) is a movement concerned with those objects which are objects of sensation (τῶν αἰσθητῶν).

b 13. ὑπὸ τῆς ἐνεργείας τῆς αἰσθήσεως, "caused by the active operation of sensation," or, which is the same thing, "by the sensation in actuality" (ὑπὸ τῆς ἐνεργείᾳ αἰσθήσεως). A. uses both forms of expression, but more often the latter, treating ἐνεργείᾳ, and so likewise δυνάμει, as a kind of indeclinable adjective.

b 14. καὶ ταύτην, int. τὴν κίνησιν, this subsequent movement. ὁμοίαν δυνάμει. For the expression cf. *De Mem.* I, 450 b 15 εἰ τ' ἐστὶν ὅμοιον [int. τὸ φάντασμα] ὥσπερ τύπος ἢ γραφὴ ἐν ἡμῖν. It is true generally that the motion transmitted through intermediaries is specifically one and the same, *φορὰ* through the stick to the stone, *ἀλλοίωσις* through the intervening medium, air or water, in sensation: 419 a 9—31, 434 b 26—435 a 5. In the case before us the stimulation (1) of sense by the external object, (2) of the imaginative faculty by sensation, must be specifically alike, although the former has an external and the latter an internal stimulus, viz. the traces of sensory movements left in the sense-organs, *μοῖαι* 408 b 18: cf. *De Insomn.* 2, 460 b 2, *De Mem.* I, 450 a 31 τύπος τις τοῦ αἰσθηματος. The impression made by a seal serves in *De Mem.* I, 450 a 32 sqq. to illustrate *μνήμη* exactly as in *De A.* it is used to elucidate *αἰσθησις* 424 a 19 sqq., 435 a 2 sqq.: and this illustration in itself implies the close resemblance of the copy to the original. εἴη δὲ...15 ἐνδεχομένη: equivalent to ἐνδέχουτ' αὖν.

b 16. κατ' αὐτήν, i.e. κατὰ τὴν φαντασίαν, "in virtue of possessing imagination." We must understand ἐνδέχουτο αὖν from the preceding εἴη αὖν ἐνδεχομένη as the predicate to which the infinitives ποιεῖν and πάσχειν τὸ ἔχον form the subject.

b 17. τὸ ἔχον. Its possessor. The neuter singular, as often, in a quasi-collective sense. There is no necessity to supply τὸ ζῶν: τὸ ἔχον, the possessor, is itself τὸ ἔμψυχον ζῶν. See *note* on 403 a 4.

On the following section, 428 b 18—25, Professor Bywater comments as follows. "Aristotle is showing that there are degrees of truth in the report of sense; and his statement, read in the light of the parallels elsewhere (in *De Anima* II. 6 and III. 1), leaves no room for doubt as to his general meaning. First in order of truth comes our sense of the ἴδια αἰσθητά: next after this our sense of the things or substances of which the ἴδια αἰσθητά are attributes and marks: third, our sense of the κοινὰ αἰσθητά in these things or substances. As regards the second kind of sense (our consciousness of the presence of a thing or substance), Aristotle's theory is that the objects in this case are only indirectly known by sense; we perceive the sensible quality of whiteness (an ἴδιον αἰσθητόν) directly, but that the white thing is the son of Cleon—to take one of his instances—we perceive only indirectly and κατὰ συμβεβηκός, because τοῦτο [i.e. τῷ λευκῷ] συμβέβηκεν νῖφ Κλέωνος εἶναι (III. I, 425 a 26; comp. II. 6, 418 a 21 κατὰ συμβεβηκός γὰρ τοῦτον αἰσθάνεται, ὅτι τῷ λευκῷ συμβέβηκε τοῦτο οὐδ' αἰσθάνεται). In the order of being the sensible attribute is conceived as the συμβεβηκός of the substance, but in the order of knowledge the relative position of things is reversed: the sensible attribute is in the latter case the primary fact, the substance the secondary or accessory fact, the συμβεβηκός. It will be observed that in the above passage, when he comes to his third point, our perception of the κοινὰ αἰσθητά, Aristotle still speaks of the things or substances as συμβεβηκός, but with the explanatory addition of οἷς ὑπάρχει τὰ ἴδια; he seems to be aware that he is using the word in an uncommon sense, and that some explanation therefore may be wanted to prevent misconception. Though

the general meaning however is clear enough, the text of the passage as we now have it involves difficulties which have puzzled the commentators from the days of Themistius downwards, and which, it seems to me, no arts of interpretation will enable us to solve" (*Journ. of Phil.* vol. xvii., p. 57). Prof. Bywater proposes to meet these difficulties by the transposition of the words b 24 ἃ συμβέβηκε τοῖς αἰσθητοῖς to follow b 19 δεύτερον δὲ τοῦ συμβεβηκέναι ταῦτα. This transposition would enable us to give to συμβεβηκέναι b 20 a meaning consistent with that of b 23 συμβεβηκόσιν. The same end is attained by more violent means if we adopt Torstrik's conjecture τοῦ ὃ συμβέβηκε τούτοις, for Torstrik intends ὃ συμβέβηκε to refer to the substance or thing regarded as accessory to its attributes. It is also possible to interpret b 20 συμβεβηκέναι and b 23 συμβεβηκόσιν consistently and yet to give to both words the more usual meaning, viz. that by which a quality or attribute is said to be accessory to a substance or thing. But in that case we must omit the words b 23 οἷς ὑπάρχει τὰ ἴδια with Maier: see *Syllogistik des Aristoteles*, I., p. 8 sq., note 2. If we are not prepared to purchase consistency by some alteration either in the wording of the received text or the order of the clauses, we are bound to admit that A. has used b 20 συμβεβηκέναι of the attributes and b 23 συμβεβηκόσιν of the substances themselves, returning in b 24 to the use of συμβέβηκε for the attributes. I have taken this latter course myself, though fully aware of the obvious objection urged by Torstrik with his usual acumen: utrumque sane recte dici potest, sed non utrumlibet eodem loco. A. is just as inconsistent when he tries to force quasi-technical meanings upon other words in common use, λόγος being a glaring instance. Cf. also the divergent use of ἔχειν in *Metaph.* 1072 b 23, 24, 26. But what parallel can be more apposite than the confusing use of γεῦσις not only for the faculty and the organ, but also for the object of taste? Yet this occurs in one and the same passage, 422 a 29—34. Both there and here, however, the writer has made his meaning clear, which is his chief concern.

428 b 18. τοῦτο δὲ, i.e. its fallibility, τὸ καὶ ἀληθὲ καὶ ψευδὲ εἶναι τὴν φαντασίαν. τὰδε, the considerations he proceeds to enumerate. They should be carefully compared with the account of αἰσθητῶν given in *De A.* II., c. 6. The broad outlines are the same. The order of II., c. 6 ἴδιον, κοινόν, κατὰ συμβεβηκός [int. αἰσθητῶν] is abandoned, κοινόν now coming last as being most subject to error. An instructive commentary is also furnished by *Metaph.* 1010 b 2—26, where sensible qualities as αἰσθητά, whether ἴδια or κοινά, are clearly distinguished from things or substances. Cf. Torstrik, pp. 175 sq.

b 19. ὅτι ὀλίγιστον, "the least possible." Cf. *supra* 427 b 11 sq., *De Sensu* 4, 442 b 8 περὶ δὲ τῶν ἰδίων οὐκ ἀπατώνται, *Metaph.* 1010 b 2—26. A. is there criticising the maxim of Protagoras. It is strange, he has remarked, that difficulties should be raised over such questions as whether the magnitude and colour of objects are what they appear to be at a distance or when near, in sickness or in health; whether the weight of an object is what it appears to be to a weak or to a strong man; whether reality belongs to our waking hours or to our dreams. Our own actions disprove our doubts. Again, with respect to sensations in the future, as Plato pointed out (*Theaet.* 178 C, 171 E), the opinion of the expert is decisive and valid. A. then proceeds: "Again, when we come to the senses themselves, their verdict on an object is not so authoritative when the object lies outside of their domain as when it is a special sensible, nor if pronounced by a neighbouring sense is it so authoritative as if it came from the appropriate sense: it is sight, not taste, which pronounces upon colour, and taste, not sight, which pronounces upon flavour. But none of the senses reports at the same time about the same object that it both has and

has not a given quality [e.g. that it is at once sweet and not sweet]. Even at different times no one ever doubted about the sensations, but solely about the object to which they belong. The same wine, if it has undergone a change, or if there has been a change in the bodily health of the person who tastes it, may at one time appear sweet and at another not; whereas the flavour of sweet as sweet, when present, never changes, but the sensation which it stimulates is always true and, in order to be sweet and to stimulate this sensation, the object must have certain definite qualities": (1010 b 14) *ἔτι δὲ ἐπ' αὐτῶν τῶν αἰσθήσεων οὐχ ὁμοίως κυρία ἢ τοῦ ἀλλοτρίου καὶ ἰδίου ἢ τοῦ πλησίον καὶ τοῦ αὐτῆς, ἀλλὰ περὶ μὲν χρώματος ὄψις οὐ γεύσις, περὶ δὲ χυμοῦ γείσις οὐκ ὄψις· ὧν ἐκάστη ἐν τῷ αὐτῷ χρόνῳ περὶ τὸ αὐτὸ οὐδὲ ποτὲ φησιν ἅμα οὕτω καὶ οὐχ οὕτως ἔχειν. ἀλλ' οὐδ' ἐν ἐτέρῳ χρόνῳ περὶ γε τὸ πάθος ἡμφισβήτησεν, ἀλλὰ περὶ τὸ ᾧ συμβέβηκε τὸ πάθος [the object, i.e. substance, to which the quality belongs]. λέγω δ' οἷον ὁ μὲν αὐτὸς οἶνος δόξειεν ἂν ἢ μεταβαλὼν ἢ τοῦ σώματος μεταβαλόντος ὅτε μὲν εἶναι γλυκὺς ὅτε δὲ οὐ γλυκὺς· ἀλλ' οὐ τό γε γλυκὺ οἶον ἐστὶν ὅταν ᾗ, οὐδεπώποτε μετέβαλεν, ἀλλ' αἰεὶ ἀληθεύει περὶ αὐτοῦ, καὶ ἔστιν ἐξ ἀνάγκης τὸ ἐσόμενον γλυκὺ τοιοῦτον.* The qualification introduced in our passage, *ὅτι δλίγιον*, must be understood with the more unguarded statements on this point elsewhere, in particular 418 a 12—16.

b 19. *τοῦ συμβεβηκέναι ταῦτα*, int. *ἡ αἴσθησις ἐστὶ*. Secondly, perception is of the fact that these *ἴδια* are accidents, *τοῦ συμβεβηκότα εἶναι ταῦτα*. That is to say, we perceive (as A. would say; at any rate, we infer) that there are things of which the special qualities (*ἴδια*) are accidents.

Thus understood, the text appears to me sound. The proposals for change proceed not only from a desire to secure consistency in the meaning of *συμβεβηκέναι*, but also from the assumption that A. could not use *συμβεβηκέναι* absolutely in the sense indicated, and that a dative must be supplied or understood. Prof. Bywater secures this dative by his transposition and would read in b 19 *τοῦ συμβεβηκέναι ταῦτα, ἃ συμβέβηκε τοῖς αἰσθητοῖς*. Earlier still Torstrik condemned the vulgate b 19 *δεύτερον δὲ...20 ταῦτα* as absurd. He states his grounds as follows (p. 175): *Loquitur Ar. de re colori vel alii qualitati sensili subiecta: si enim album videmus, dicimus nos nivem videre vel cygnos vel tentorium, quamquam in eâ re facile erramus: (b 21) ὅτι μὲν γὰρ λευκόν, οὐ ψεύδεται, εἰ δὲ τοῦτο τὸ λευκόν ἢ ἄλλο τι, ψεύδεται.* Haec vero sententia non sic potest dici, sensum esse τοῦ συμβεβηκέναι ταῦτα: nam τὸ συμβεβηκέναι non est obiectum sensûs, sed intellectûs, sicut ceterae notiones abstractae. Here I think Torst. is in error. If A. believed that it is by sense that we perceive, not only *τὰ κοινά*, but the difference between two sensibles (426 b 14 sq.), he would have no difficulty in assuming *αἴσθησις τοῦ συμβεβηκέναι τὰ ἴδια*, for difference and magnitude are just as much "notiones abstractae" as the conception of the thing or substance to which the *ἴδια* are referred as attributes and accidents. The divergence of view between Plato and A. on this point is notorious: see *notes* on 418 a 17, 426 b 15. Torst.'s own conjecture *τοῦ δὲ συμβέβηκε τούτοις* is based upon the variant of cod. X *τοῦ συμβεβηκότος*, the Aldine edition *τοῦ δὲ συμβέβηκε καὶ ταῦτα*, Themistius 93, 10 H., 171, 19 sq. Sp. *δεύτερον δὲ τῶν ὑποκειμένων τοῖς ἰδίοις καὶ οἷς ἐκεῖνα συμβέβηκε* and the fact that codd. L and E have *τῷ* for *τοῦ*. Thus he, too, is in search of a dative to go with *συμβεβηκέναι*. But there is no more need of a dative here than in *Μεταφῆ.* 1007 a 21 *πάντα γὰρ ἀνάγκη συμβεβηκέναι φάσκειν αὐτοῖς*, "they are bound to call all things accidents," even *οὐσία* and the *τί ἦν εἶναι*, as the context shows. It would seem, then, that the received text makes A. say exactly what Torstrik wishes him to say *τοῦ δὲ συμβέβηκε τούτοις*, and in a far neater and more idiomatic way: to perceive that the *ἴδια* are attributes implies that there is a substance of which they are

attributes or accidents, *εἰ μὴ χωριστὰ τὰ πάθη ἀλλήλων*. This, the more common and natural use of *συμβεβηκέναι*, is not only in accord with *ἃ συμβέβηκε τοῖς αἰσθητοῖς* b 24, but also with *Μεταρῆ*. 1010 b 20 sq. τὸ *ὃ συμβέβηκε τὸ πάθος* cited in *note* on 428 b 19 *ὅτι ὀλίγιστον*: see Bonitz *ad loc.*, p. 207.

b 20. *καὶ ἐνταῦθα ἥδη*. It is when we come to this second kind of perception, involving reference of an *ἴδιον* to something of which it is an accident, that serious error becomes possible.

b 21. *ὅτι μὲν γὰρ λευκόν*, int. *πάρεστι* or *τὸ αἰσθητόν ἐστι*. The subject to *ψεύδεται* is, again, indefinite, *ὁ αἰσθανόμενος* or *τις*, and I should supply *τὸν αἰσθανόμενον* as subject to the infinitive *διαψεύδεσθαι* in the preceding line. As to the fact that there is something white before him, or that that which he sees is white, a man, generally speaking, cannot be mistaken. Error arises on the question whether the white object is this or that thing or person, e.g. the son of Cleon or someone else. Cf. 418 a 15 sq., 430 b 29 sq.

b 22. *τρίτον δὲ τῶν κοινῶν*, int. *ἡ αἰσθησίς ἐστι*.

b 23. *τοῖς συμβεβηκόσιν...τὰ ἴδια*. This must mean the substances, *ὑποκείμενα*, whether things or persons, to which the qualities perceived by the special senses belong. They are called *συμβεβηκότα* either as being *κατὰ συμβεβηκὸς αἰσθητά* (cf. 418 a 20 sqq.) or because, in the words of Professor Bywater (*loc. cit.*), "in the order of being the sensible attribute is conceived as the *συμβεβηκὸς* of the substance, but in the order of knowledge...the sensible object is the primary fact, the substance the secondary or accessory fact, the *συμβεβηκός*." If we leave the text unaltered, we must assume that A. has changed his point of view from the order of being to the order of knowledge.

b 24. *ἃ συμβέβηκε τοῖς αἰσθητοῖς*. Torstrik and Biehl bracket these words. Professor Bywater (*Journ. of Phil.*, l.c.) prefers to transpose them. If they are omitted here, the parenthetical remark introduced by *λέγω δ'*, b 23, includes no more than *λέγω δ' οἷον κίνησις καὶ μέγεθος*. If we retain the words in their traditional place, we can account for their presence by the fact that, in describing *τὰ κοινὰ* as *ἐπόμενα τοῖς συμβεβηκόσιν*, οἷς *ὑπάρχει τὰ ἴδια*, A. is conscious of having employed an unusual phrase, not easily intelligible, and only adopted to make clear the double chance of error in such conceptions as magnitude and motion: (1) because they are not *ἴδια* and not directly perceived by any single special sense (cf. 425 a 15 with *notes*) and (2) because they are attributes of *κατὰ συμβεβηκὸς αἰσθητά*, i.e. of things or substances themselves not directly perceived but, as we should say, only inferred from the direct perception of special sensible qualities. But, having so described them, as soon as he comes to the examples, A. is glad to revert to the more ordinary expression that these *κοινὰ*, as well as *τὰ ἴδια*, *συμβέβηκε τοῖς αἰσθητοῖς*, are attributes of things or substances. By *τοῖς αἰσθητοῖς* we should naturally understand *τοῖς ἰδίοις*, which are *αἰσθητά* in the strict and proper sense of the term, 418 a 24 sq. But, though the common sensibles accompany the special sensibles, *ἔπεται, ἀκολουθεῖ*, it is the substances in which the special sensibles inhere that, as explained above, are properly said *συμβεβηκέναι* in this connexion, and not the common sensibles. Hence Torst., following Simpl., is driven to understand by *τοῖς αἰσθητοῖς* the things or substances incidentally perceived. Cf. Simpl. 216, 14 *ὑπάρχει δὲ τὰ κοινὰ ὥσπερ καὶ τὰ ἴδια συμβεβηκότα, ὅντα ἄμφω τοῖς κατὰ συμβεβηκὸς αἰσθητοῖς, ἅπερ αἱ ὑποκείμεναι οὐσίαι*, Torst. (p. 176): *possunt quidem haec aliquo modo defendi, si quis dicat τὰ αἰσθητά hoc loco non esse τὰ ἴδια* (v. c. *colorem*) *sed subiecta οἷς ὑπάρχει τὰ ἴδια* (v. c. *hominem colore praeditum*). I myself incline to the latter view.

b 24. *περὶ ἃ*. This remark is parallel to that beginning *καὶ ἐνταῦθα* above.

The reference of the relative is to τῶν κοινῶν, the words λέγω δ' οἷον κίνησις καὶ μέγεθος forming a parenthesis. περὶ ἃ is here equivalent to καὶ περὶ ταῦτα, just as in 430 b 18 I take δ = καὶ τοῦτο.

b 25. μάλιστα. The chance of error is greatest in dealing with τὰ κοινά, greater than in referring qualities or attributes to a thing or substance: cf. 425 b 6—11. ἡ δὲ κίνησις ἡ ὑπὸ τῆς ἐνεργείας γινομένη, that is to say, (according to 428 b 10 sqq.) the secondary or subsequent movement which constitutes φαντασία. It is here described as due to the activity (of sensation). Cf. *supra* 428 b 13 κίνησιν ὑπὸ τῆς ἐνεργείας τῆς αἰσθήσεως. If τῆς αἰσθήσεως, which is found in the MSS. after διοίσει, be retained, it must in any case be constructed with ἐνεργείας and would be more in place if transposed to follow that word.

b 26. διοίσει, "will vary," that is, will assume different forms, according as it proceeds from one or another of the three kinds of percept: Dicit igitur διοίσει, h. e. discrimen habebit: non additur a qua tandem re differat ἡ φαντασία, quia non id quaeritur, sed quae sint τῆς φαντασίας ipsius species ac differentiae (Torstrick p. 177). M. Rodier translates: "Par suite, en ce qui concerne le mouvement produit par la sensation en acte, c'est-à-dire en ce qui concerne l'imagination, celui qui résultera de chacune de ces trois sortes de sensations, différera de celui qui résultera de chaque autre." The meaning and connexion of the passage are best seen from Alex. *De An.* 70, 5 ἡ μὲν οὖν περὶ τὸ ἐγκατάλειμμα τὸ ἀπὸ τοῦ καθ' αὐτὸ αἰσθητοῦ σωζόμενον γινομένη ἐνέργειά τε καὶ φαντασία ὁμοίως τὸ ἀληθές τε καὶ τὸ ψεῦδος ἔξει τῇ αἰσθήσει ἐφ' ἣ γίνεται. διὸ αἱ πλείεστα τῶν τοιούτων καὶ περὶ τὰ τοιαῦτα φαντασιῶν ἀληθεῖς, αἱ δὲ περὶ τὰ ἐγκαταλείμματα ἀπὸ τῶν κοινῶν τε αἰσθητῶν καὶ κατὰ συμβεβηκὸς πολλὰ τὸ ψεῦδος ἔχουσιν. No genitive need go with the verb of our lemma and, least of all, τῆς αἰσθήσεως. In what the φαντασία will vary A. does not expressly say, but if we bear in mind that he has been showing that there are degrees of truth in the reports of sense and goes on to show that there are similar degrees of truth and falsehood in the φαντασίαι, it seems clear that the difference referred to must be difference of truth and falsehood. Various other interpretations have been proposed. (1) Philop. understands διοίσει τῶν αἰσθήσεων πασῶν ἀφ' ὧν γέγονεν (514, 19), imagination will be a movement distinct from sense, but this point has been laboured in 428 a 5—16: cf. 428 b 10 sqq. (2) Much the same sense is obtained by Bekker's purely conjectural reading τῆς ἀπὸ τούτων τῶν τριῶν αἰσθήσεων, "further, the movement which results from the activity due to these three sorts of sense will be distinct from the sensation which causes it." (3) Christ proposed ἡ ἀπὸ τούτων τῶν τριῶν αἰσθήσεων, "in so far as it [the movement, i.e. imagination] results from these three sorts of sense."

b 27. ἡ ἀπὸ τούτων. From Torstrick's masterly note, p. 177, it is certain that Bekker's reading τῆς ἀπὸ τούτων was due to inadvertence. It is found in none of the MSS. which he was collating, but is the reading, doubtless conjectural, of the Basileensis, in a copy of which he recorded the variants of those MSS.

b 27. τῶν τριῶν αἰσθήσεων, viz. (1) perception of sensible qualities proper to the several separate senses (ἴδια); (2) perception of substances (things or persons) in which such sensible qualities inhere as accidents or attributes; (3) perception of attributes, which, though belonging to such substances, are not perceived by one sense only, but are indirectly perceived by several or all of the single special senses, directly only by sense as a whole (κοινά). ἡ μὲν πρώτη, int. κίνησις, i.e. φαντασία, of the first sort, that is, derived from perception of the first sort. παρούσης τῆς αἰσθήσεως, "so long as the original sensation lasts." After it has passed away, the subsequent movement which it set up in

the sense-organs, i.e. the *φαντασία* corresponding to it, becomes gradually weaker and may thus eventually cease to be true.

b 28. αἱ δ' ἕτεραι, int. *κινήσεις*. καὶ παρουσίας καὶ ἀπουσίας, int. *τῆς αἰσθήσεως*.

b 30 εἰ οὖν... 429 a 2 *γιννομένη*. The critical notes disclose considerable variations in the authorities. We may at once set aside the text of Bekker and Trend., in which Torst. has proved that *μὴ* before b 30 *φαντασίαν* has no manuscript authority, but is merely a printer's error in Sylburg's edition, on the margin of which, as well as on that of the Basileensis, Bekker and Brandis entered the results of their collations. The first point to decide is whether we shall follow cod. E in reading *μὲν* after *μηδὲν* or the six manuscripts of the other family which omit *μὲν*: *miror protasin, ad inanem verborum speciem factam* (Trend.). Then again, E has *μηθὲν μὲν ἄλλο ἔχει ἢ τὰ εἰρημένα ἢ φαντασία*, while most other MSS. transpose this *ἢ* to follow *εἰρημένα* and only cod. W has both *ἢ* and the article *ἡ* before *φαντασία*. The divergence of the two families may be explained if the omission of *μὲν* is an oversight on the one side and if, at the same time, as Torst. suggests, the scribe of E, with equal carelessness, has anticipated *ἢ*. Doubtless the text of E, adopted by Biehl, affords a good sense: "if imagination has no other characteristic than those already specified": and I have been content to follow it in the translation, though the words *ἢ τὰ εἰρημένα* certainly seem superfluous. But the alternative given by the other MSS., "if imagination alone has the given characteristics," seems on the whole better. Moreover, with the reading of E, *ἡ φαντασία* is indispensable to the first clause. Yet this *ἡ* (or, according to most other MSS., *ἢ*) *φαντασία* is not above suspicion. Philop. appears not to have read *ἡ φαντασία* in his text after *εἰρημένα*: (514, 31) *εἰ οὖν μηδὲν ἄλλο ἔχει τὰ εἰρημένα, τοὔτεστι πλὴν φαντασίας, ἡ δὲ φαντασία ἐστὶν ἡ ἔχουσα τὰ λεχθέντα, ἅτινα καὶ τὴν οὐσίαν αὐτῆς συμπληροῦσι, λέγω δὴ τὸν ὁρισμόν, δηλὸν ὅτι κτέ.* If it were certain that such an omission of *ἡ φαντασία* rested on good authority, it would be tempting to extrude *ἡ φαντασία*, *τοῦτο δ' ἐστὶ τὸ λεχθέν* as a marginal gloss. However, if Philop. had not *ἡ φαντασία* in his text, he nevertheless had the following clause *τοῦτο δ' ἐστὶ τὸ λεχθέν*. Torst. urges that *τοῦτο* can refer neither to *τὰ εἰρημένα* nor to *φαντασία*. But, if *ἡ φαντασία* were absent from the original text, *τοῦτο* might very well denote *ἡ φαντασία*, as Philop. understood it, *ἡ δὲ φαντασία ἐστὶν ἡ ἔχουσα τὰ λεχθέντα*, where the words emphasised are the natural variations of paraphrase and seem hardly to justify Torst.'s *τοῦτο δ' ἔχει*: in fact, *ἔχειν τὰ εἰρημένα* and *εἶναι τὸ λεχθέν* come to about the same. Or again, it is just conceivable that *τοῦτο* may replace *τὸ μηδὲν ἄλλο ἔχειν τὰ εἰρημένα* (or *ἡ τὰ εἰρημένα*, if that was the genuine reading). It was stated b 11 that imagination *δοκεῖ*, is held to be, *κίνησις τις*, intimately conjoined with *αἴσθησις* etc. and b 15 such an hypothetical movement, *αὕτη ἡ κίνησις*, is further described. All that remains is to identify what has been thus described with the faculty of which we are in quest. This may well be the sense of the words *τοῦτο δ' ἐστὶ τὸ λεχθέν*, which would then mean "and if this (viz. *φαντασία*) is what some have described it as being," referring back to b 11 *δοκεῖ*. Cf. Them. 93, 21 H., 176, 6 Sp. *εἰ τοίνυν ὅτι μὲν ἔστιν ἡ φανταστική δύναμις τῆς ψυχῆς, ἅπασι φανερόν, οὐδεμίαν δὲ ἄλλην τῶν διηριθμυμένων οὐσαν τοιαύτην ὁ λόγος ἐξεῦρεν, λείπεται ταύτην εἶναι ἣν ἡμεῖς φαμέν κίνησιν τῆς ψυχῆς ὑπὸ τῆς αἰσθήσεως τῆς κατ' ἐνέργειαν γνωμένην*. It was probably the first clause in this extract from Them. which inspired Biehl to change the accent from *ἐστὶ* to *ἔστι*: "and if this which has been described really exists."

b 30. *τὰ εἰρημένα*, the above-mentioned marks or characteristics, viz. dependence on sensation, presence in living beings and fallibility.

429 a 1. ἡ φαντασία ἂν εἴη. Cf. *De Insomn.* I, 459 a 17 ἔστι δ' ἡ φαντασία ἡ ὑπὸ τῆς κατ' ἐνέργειαν αἰσθήσεως γινομένη κίνησις.

a 2. ἡ ὄψις μάλιστα αἰσθησίς ἐστι. Cf. *De Sensu* I, 437 a 3 sqq., *Metaph.* 980 a 21 sqq., Plato, *Phaedrus* 250 D and *Timaeus* 47 A.

a 4. διὰ τὸ ἐμμένειν, int. τὰς κινήσεις, i.e. τὰς φαντασίας. Cf. 425 b 24 sq. ἐνευσιν... ἐν τοῖς αἰσθητηρίοις, 408 b 18.

a 5. κατ' αὐτὰς, i.e. κατὰ τὰς φαντασίας. Cf. 415 a 11, *Metaph.* 980 b 25 τὰ μὲν οὖν ἄλλα ταῖς φαντασίαις ζῆ καὶ ταῖς μνήμαις, ἐμπειρίας δὲ μετέχει μικρόν.

a 6. οἷον, scilicet: and so a 8. See note on 415 a 22.

a 7. πάθει, in the narrower sense (see note on 403 a 16), approximating to ὀρέξει, or at least ἐπιθυμία. This would include appetite and pleasure and pain, as well as what we call emotions, such as anger and fear.

a 9. διὰ τῷ. Mention has been made both of the efficient cause (that is, the previous motion of sensation) and of the final cause, namely, that animals may be enabled, reason apart, to act and be acted upon in various ways. The definition obtained satisfies the canons laid down 402 b 21—25, 413 a 13—16.

## CHAPTER IV.

Hitherto the order has been, in general, to proceed from lower faculties to higher and from the most widely diffused to the least common. In accordance with this principle locomotion, being far more common in the animal world than intellect, should have been taken before it. The departure from this order is due to A.'s desire to treat the two discriminating faculties, intellect and sense, together. A further reason is that intellect, being one of the causes to which animal locomotion is ascribed, requires to be treated first.

For the comments of Theophrastus on III., cc. 4 and 5 see the Appendix.

**429 a 10—b 9.** Coming now to intellect, the part of the soul concerned with knowledge and thought, we must consider how it differs from other faculties and how thinking comes about [§ 1]. Thought, assuming that it is analogous to perception, implies that mind is acted upon by the object of thought, or that something of the sort happens [§ 2]. If so, the mind must be impassive, receptive of form and potentially like its object, without actually being its object. In order to think all things, it must, in the words of Anaxagoras, be unmixed. Allow the mind to have any form of its own, and the intrusive presence of this form disqualifies the mind from receiving any form from an external object. Mind is thus a mere capacity. Before it thinks, it is in actuality nothing [§ 3] and, consistently with this, it must, further, be incorporeal. Any admixture with the body would invest it with some one or other sensible quality and would necessitate a special bodily organ, which, in fact, does not exist. The soul has been described as a place of forms or ideas. This is just what the thinking soul is potentially, not actually [§ 4]. The impassivity of intellect is different from the impassivity of sense. Sense becomes fatigued and the sense-organ fails when the sensible object has been too overpowering. But with the mind this is not so. Occupation with the highest intellectual objects does not disable or unfit it from subsequently contemplating what is less abstract, mind being independent of a bodily organ [§ 5]. Even after the mind has become all things, it is still in some sense a mere capacity; a capacity, however, resembling that which enables the savant to exercise his knowledge at will: and at this stage the mind can know itself.



429 a 10. *περὶ δὲ τοῦ μορίου*. From consideration of what in the *Ethics* is called τὸ ἄλογον, we pass now definitely to τὸ λόγον ἔχον. In calling νοῦς a part of the soul A. is, as usual, condescending to popular language. All mention of "parts" of the soul must be provisional: see 432 a 22 sqq.

a 10 *ὃ γινώσκει τε... ἡ καὶ φρονεῖ*. The word γινώσκει is not in itself peculiar to intellect, but applies to sense as well: cf. 427 a 21 *γνωρίζει*, *De Gen. An.* I. 23, 731 a 33 *αἰσθησιν γὰρ ἔχουσιν, ἡ δ' αἰσθησις γνῶσις τις*. It is the addition of φρονεῖ that discriminates intellect from the other cognitive faculty, viz. sense; for, as we saw 427 b 6 sq., φρονεῖν is not the same as αἰσθάνεσθαι. According to Themistius and Simplicius, however, the words of the lemma point to the theoretical and practical activity of soul. For the division cf. *infra* 433 a 14 *νοῦς δὲ ἐνεκά του λογιζόμενος καὶ ὁ πρακτικός· διαφέρει δὲ τοῦ θεωρητικοῦ τῷ τέλει* and *Eth. Nic.* 1103 b 26 sqq., 1139 a 26 sqq. But the terms are ill-chosen, if this division is intended by A. Cf. *De Sensu* I, 437 a 1 cited in *note* on 434 b 26 and 437 a 2 *ἡ τε τῶν νοητῶν ἐγγίνεται φρόνησις καὶ ἡ τῶν πρακτῶν*.

a 10. *ἡ ψυχὴ*. A strict adherence to the precept of 408 b 13 sqq. would require the substitution of ὁ ἄνθρωπος for ἡ ψυχὴ. So Them. 93, 32 H., 172, 23 Sp. paraphrases *ὃ χρώμεθα εἰς θεωρίαν καὶ πρᾶξιν*. The soul is properly the instrument of thought as well as of sensation and vegetative life to the animate compound, man: 414 a 12 *ἡ ψυχὴ δὲ τοῦτο ὃ ζῶμεν καὶ αἰσθανόμεθα καὶ διανοούμεθα πρῶτως*. Cf. also A.'s use of ψυχὴ in 430 a 13, 430 b 15, 431 a 14.

a 11. *χωριστοῦ*. The qualifying clause a 11 *εἴτε χωριστοῦ... a 12 λόγον* is elicited by the term *μόριον*: cf. 413 b 13 *πότερον δὲ τούτων ἑκαστὸν ἐστὶ ψυχὴ ἢ μόριον ψυχῆς, καὶ εἰ μόριον, πότερον οὕτως ὥστ' εἶναι χωριστὸν λόγῳ μόνον ἢ καὶ τόπῳ*. The case of νοῦς was specially reserved 413 b 24—27 (cf. 415 a 11). Hence *χωριστοῦ* must mean "separable from the other parts or faculties of soul." Two questions arise: (1) Is νοῦς separable or inseparable? (2) If separable, is it separable spatially (cf. *τόπῳ καὶ ἀριθμῷ* 427 a 5) or only in thought? If νοῦς is *χωριστὸς κατὰ μέγεθος τῶν ἄλλων μορίων* it follows that it is also *χ. τοῦ σώματος* and capable of independent existence. Cf. 403 a 5—16. The interpretation of *χωριστοῦ* given above agrees with that of Plutarch of Athens apud Philoponum 520, 34 sqq. and accords with the language of *Eth. Nic.* 1102 a 28 *ταῦτα δὲ* (int. τὸ ἄλογον and τὸ λόγον ἔχον) *πότερον διώρισται καθάπερ τὰ τοῦ σώματος μόρια καὶ πᾶν τὸ μεριστόν, ἢ τῷ λόγῳ δύο ἐστὶν ἀχώριστα πεφυκῶτα*. Cf. 429 b 16 *ἥτοι χωριστῷ ἢ κτέ.* and 431 b 17—19. Some further consideration of the question is brought in at 434 b 3 sqq. in connexion with the necessity of αἰσθησις in animals.

a 12. *κατὰ μέγεθος* expresses the same meaning as *κατὰ τόπον*, spatially, locally, as one physical thing and its accidents are separate from another. Either phrase or both can be opposed to *λόγῳ* or *κατὰ λόγον*: cf. 403 a 11, 413 b 15, 427 a 4 sq., 432 a 20, 433 b 24 sq. *διαφορᾶν*, characteristic quality, distinguishing mark. Cf. 413 b 19, *note*. It may be suggested that in 429 a 10—b 9 A. deals mainly with the distinctive attributes of νοῦς and that at 429 b 10 he passes to the process of thinking; but nature and operation, operation and object are so closely blended that no hard and fast line is possible.

a 14. *ὥσπερ τὸ αἰσθάνεσθαι*. The two processes, which are not identical, according to 427 b 8 sqq., b 27, are assumed to be analogous: cf. 427 a 8 sq., 431 b 28—432 a 3. Whenever αἰσθάνεσθαι can be interpreted by κρίνειν, there is some analogy with thought, but this is most clearly seen in the perception of difference and identity and the other operations, like self-consciousness, which A. has ascribed to *sensus communis*. In what follows A. begins with points of

community, but also takes notice of differences, e.g. 429 a 29 sqq., which indeed have already come up 417 b 16—29, a passage which ends with a reference to further discussion, presumably in the present chapter. In one respect there is a formal difference in the treatment of νοῦς. In II., c. 6 various meanings of αἰσθητὸν were carefully distinguished. There is no similar preliminary elucidation of νοητὸν, unless it can be indirectly derived from the not very satisfactory discussion 427 b 6—b 29.

a 14. ἡ πάσχειν τι ἂν εἴη, int. τὸ νοεῖν. See notes on 410 a 25, 427 a 20. Cf., however, Simpl. 223, 40 τὸ μὲν γὰρ τὸ πρόσκειται τῷ πάσχειν, ἵνα μὴ φθαρτικὸν τὸ πάσχειν ἀκούσωμεν: cf. 417 b 2 sqq. For intellect, as well as for sense, the modification expressed by πάσχειν is not φθορά τις ὑπὸ τοῦ ἐναντίου, but a σωτηρία τοῦ δυνάμει ὄντος. It was agreed, however, in default of a better term, to use the word πάσχειν to express this, 418 a 2 sq. ὑπὸ τοῦ νοητοῦ. Cf. *De Part. An.* I. 1, 641 a 36 ὁ γὰρ νοῦς τῶν νοητῶν...τῆς γὰρ αὐτῆς [int. ἐπιστήμης] περὶ νοῦ καὶ τοῦ νοητοῦ θεωρησάι. ἡ τι τοιοῦτον ἕτερον. The analogy between sense and intellect must not be pressed too far. The latter has no bodily organ, 429 a 26 sq., so that the resemblance between them is incomplete. Cf. also 429 a 29 sqq.

a 15. ἀπαθὲς. See *Ind. Ar.* 72 a 36—40 τὸ μὴ πεπονθὸς...ita...429 a 15 significare videtur μηδὲν πῶ πεπονθὸς. Applied to intellect, the term means (1) not having yet suffered, i.e. devoid of the objects of thought which it is to receive and (2) incapable of suffering or of being affected by them, i.e. in its own nature, when they are received. As to the sense of ἀπαθὲς see notes on 405 b 19—21 and *infra* 429 b 23, where the quotation from Anaxagoras is repeated. If the meaning were restricted to (1), as a casual reading of Bonitz, *Ind. Ar.*, would lead one to suppose, A. must be thinking in the present passage of the mind of the child at birth or before it has ever thought at all, and πρὶν νοεῖν 429 a 24, πρὶν ἂν νοῇ 429 b 31 would be similarly restricted, which seems inconsistent with 429 b 3—5, which certainly does not refer to the child, and with 429 b 5—9. The second meaning implies the first, for if mind is incapable in its own nature of ever being altered or affected, it must be so incapable to start with. It remains what it was at first, a permanent capacity. The analogy of the senses has prepared us for this conclusion. See *ἄχρουν* 418 b 26 sq. note, ἀκίνητος 420 a 10 (see note), a 15—18, and generally 424 a 7—10. The difference is, as Zabarella explains, that sense is impassive only in certain respects, thought in all respects. To apply the term πάσχειν to anything ἀπαθὲς is inconsistent, as A. himself fully admits when he afterwards discusses the difficulty herein involved, 429 b 22 sqq. There is, however, no real contradiction of the preceding sentence when once the meaning is fully understood. Intellect in a still higher degree than sense, 429 a 29 sqq., remains unaffected, i.e. entirely unaltered in its nature, by the object of thought, whatever it be. Intellect is not liable to be altered or destroyed. It is a permanent capacity which, as often as it is acted upon by an object, is developed into actuality (Them. 94, 9 H., 173, 12 Sp. τελειοῖτο ἂν εἰς ἐνέργειαν ἐκ δυνάμεως), and this it could not be if, when once acted upon, it underwent essential modification. Mind cannot at any time receive that which it already possesses in actuality. Any form of its own would stand in the way of its receiving forms from without and spoil it as a recipient of εἶδη and διαφοραὶ τῶν εἰδῶν. The argument is precisely similar to that by which Plato in the *Timaeus* 50 A—51 A demonstrates that his ὑποδοχή, if it is to receive all forms, must itself be destitute of form. Besides the general resemblance of the argument, reminiscences of particular phrases, e.g. παρεμφαίνον ὄψιν, indicate that A. has this passage especially in view. See Archer-Hind *ad loc.* p. 177 sq.

The resemblance was first pointed out by Teichmüller, *Studien zur Geschichte der Begriffe*, p. 333 sqq. *note*.

a 15. δεκτικὸν δὲ τοῦ εἶδους. Cf. 424 a 18, 425 b 23, of sense, 427 a 8 sq. of sense and thought, with *notes*. Further cf. 414 a 8—10, *Metaph.* 1072 b 22 τὸ γὰρ δεκτικὸν τοῦ νοητοῦ καὶ τῆς οὐσίας νοῦς.

a 16. δυνάμει τοιοῦτον, int. οἷον τὸ νοητὸν ἐντελεχεία ἐστίν. Like the two preceding characteristics, ἀπαθές and δεκτικὸν τοῦ εἶδους, this has been transferred to thought from sense, where it had become the standing formula. Cf. 417 a 20 πάσχει μὲν γὰρ τὸ ἀνόμοιον, πεπονθὸς δ' ὁμοῖον ἐστίν, 418 a 3 τὸ δ' αἰσθητικὸν δυνάμει ἐστίν οἷον τὸ αἰσθητὸν ἤδη ἐντελεχεία κτέ., 422 a 7, 422 b 15, 424 a 23 sqq. ἀλλὰ μὴ τοῦτο. The mind in actual thought is identical with its object at the particular time: previously to actual thinking it is not actually identical, though capable of becoming so. Sense is receptive of the sensible form ἀνευ τῆς ὕλης, 424 a 18, and what sense receives then is in this respect (ἀνευ τῆς ὕλης) different from the sensible object. This makes clear the meaning of δυνάμει τοιοῦτον ἀλλὰ μὴ τοῦτο as applied to νοῦς. Intellect before actual thinking is not identical with any of the particular forms which in actual thinking it receives. We may call it an apparatus for receiving-all and every such form, εἶδος εἰδῶν. But, in order to be such an apparatus, it must be capable of the identification with its object which, according to A., takes place in every act of thought: 429 b 5 ὅταν ἕκαστα γένηται: cf. 430 a 2 sq. Here, as elsewhere, τοῦτο emphasises the particular νοούμενον, τοιοῦτον the universal νοητόν. For δυνάμει cf. Them. 94, 17 H., 173, 24 Sp. ὥσπερ ἐκείνη [int. ἡ αἰσθησις] κατ' ἐνέργειαν οὐδ' ὅτι οὖν ἦν ὡν ἡσθάνετο, οὕτω μηδὲ τὸν τοιοῦτον νοῦν κατ' ἐνέργειαν εἶναι τι τῶν νοουμένων. In fact, II., c. 12 is the best commentary on the present section.

a 16. ὁμοίως ἔχειν. The construction with δεῖ, 429 a 15, is continued.

a 17. ὥσπερ τὸ αἰσθητικὸν...οὕτω τὸν νοῦν. In 402 b 12 οἷον τὸ νοεῖν ἢ τὸν νοῦν καὶ τὸ αἰσθάνεσθαι ἢ τὸ αἰσθητικὸν we similarly find τὸ αἰσθητικὸν and not αἰσθησις answering to νοῦς.

a 18. ἀμιγῇ. This is a further inference from the analogy of sense and intellect. With "unmixed" supply "with objects of cognition," i.e. εἶδη νοητά, intelligible forms, πάντα τὰ νοούμενα being implied in πάντα νοεῖ. In 429 b 23 sq. ἀμιγῆς is practically replaced by μηθενὶ μηθὲν ἔχει κοινόν: cf. 405 b 20. So Alex. apud Philop. 523, 4 φησὶ γὰρ ὅτι εἰ πάντα νοεῖ, ἀμιγῆς ἐστὶ τῶν εἰδῶν καὶ οὐκ ἔχει εἶδος, Them. 94, 19 H., 173, 27 Sp. μὴ ἔχειν εἶδος οἰκείον μηδὲ μορφὴν, Simpl. 225, 35 οὐδὲν ἐστὶν τῶν νοητῶν, ἀλλὰ πρὸς πάντα ὑπάρχει ἀμιγῆς: cf. 225, 37 ἐπεὶ ὁ γε ὡς ὁ ἐπιστήμων ἕκαστα γινόμενος δι' ἑαυτοῦ καὶ οὐκέτι ἀμιγῆς. Philop., however, 521, 28; 522, 31 sqq. supplies τῆς ὕλης with ἀμιγῆς, which would be an anticipation of 429 a 24, and this view was vehemently maintained by Averroes, Aquinas and many scholastics. But it seems more reasonable that A. should first call attention to the attributes in which intellect and sense agree before passing to their dissimilarity. The dictum of Averroes on this passage "non est corpus neque virtus in corpore" became a battle-ground of controversy. To my view it may be objected that ἀμιγῆς approximates in meaning to ἀπαθής. No doubt this is true, but we can easily see how both terms came to be used. Their meaning is distinct so long as they are applied to the νοῦς of Anaxagoras; it is neither affected by, nor mixed with, the other things in the universe: and the predicates of the Anaxagorean νοῦς are transferred, doubtless with some change of meaning, to νοῦς as Aristotle conceives it and seeks to define it. Among the attributes ascribed to the deity *Metaph.* 1073 a 3—11 there are duplicates, for it is declared to be οὐσία αἰδώς, ἀκίνητος, κειχωρισμένη τῶν αἰσθητῶν, μέγεθος οὐκ ἔχουσα, ἀμερής, ἀδιαίρετος, ἀπαθές, ἀναλλοίωτον.

a 18. ὥσπερ φησὶν Ἀναξαγόρας. Cf. Anaxagoras, *frag.* 12 D apud Simpl. in *Phys.* 164, 24 νοὺς δὲ ἐστὶν ἄπειρον καὶ αὐτοκρατὲς καὶ μέμικται οὐδενί. Cf. *Phys.* VIII. 5, 256 b 24 διὸ καὶ Ἀναξαγόρας ὁρθῶς λέγει, τὸν νοῦν ἀπαθὴ φάσκων καὶ ἀμυγῇ εἶναι, ἐπειδὴ περ κινήσεως ἀρχὴν αὐτὸν ποιεῖ εἶναι· οὕτω γὰρ ἂν μόνως κινούη ἀκίνητος ὢν καὶ κρατοίη ἀμυγῆς ὢν, where A. has just been arguing that there is a cause of motion, itself unmoved, ὁ κινεῖ ἀκίνητον ὢν. Cf. also Plato, *Crat.* 413 C, *Phaedr.* 270 A. In order to understand the present passage, it is most important to consult the fragment of Anaxagoras which is quoted entire in the *note* on 405 a 16, p. 229 *supra*.

a 19. ἵνα κρατῇ. To Anaxagoras one of its functions was to rule: it rules the rotation of the universe τῆς περιχωρήσιος τῆς συμπάσης νοὺς ἐκράτησεν. Another was to arrange in order (διεκόσμησε) things past, present and future. Knowledge is no doubt ascribed to it in the words γνώμην γε περὶ παντὸς πᾶσαν ἴσχει. But this is something distinct. As A. is adapting the word κρατῇ to an account of the mind of man, he must perforce interpret it of cognition. Cf. *Elh. Nic.* 1177 a 14 δοκεῖ ἀρχεῖν καὶ ἡγεῖσθαι καὶ ἔννοιαν ἔχειν περὶ καλῶν καὶ θείων.

a 20. παρεμφαινόμενον γὰρ...ἀντιφράττει. The subject must be νοὺς. The neuter gender a 15 (*bis*), a 16 is due to a 10 μόριον, with which A. started. It was interrupted by the masculine ἀμυγῇ a 18, but is resumed here and a 22 δυνατὸν. I conceive παρεμφαινόμενον to be middle, as in *Probl.* XXIII. 9, 932 b 22 ἔστι δὲ τὸ ὕδωρ εὐδιοπτότερον τοῦ ἐλαίου. τὸ γὰρ ἔλαιον χρῶμα ἔχει, τὸ δὲ ὕδωρ ἄχρουν παρεμφαινόμενον σαφεστέραν ποιεῖ τὴν ἔμφασιν: water is easier to see through than oil, for oil has colour, but water, presenting a colourless surface, makes the reflection of anything in itself clearer. Here παρεμφαινόμενον appears to be no more than παραφααινόμενον, though ἔμφασιν following accords better with παρεμφαινόμενον. So in our present passage. The scholastic version *intus iuxta apparens* lays too much stress upon the preposition ἐν and thus, as may be seen from Zabarella, gave the mediaeval commentators needless trouble. The force of παρὰ here answers somewhat to "intruding itself alongside of the alien object," παρὰ τῷ ἀλλοτρίῳ, viz. in the attempt to receive the latter, much as in *Timaeus* 50 E referred to above παρεμφαῖνον ὄψιν means "obtruding its own aspect." In Plato the receptacle of generation is compared to a mass of plastic material capable of assuming all the various shapes impressed upon it: for this purpose, Plato argues, it must in its own nature be destitute of shape, ἄμορφος. For, if it had a shape of its own, it would render faultily any opposite or entirely different shape impressed upon it from without: (50 E) ὁμοιον γὰρ ὃν τῶν ἐπεισιόντων τινὲ τὰ τῆς ἐναντίας τὰ τε τῆς τὸ παράπαν ἄλλης φύσεως, ὅπότ' ἔλθοι, δεχόμενον κακῶς ἂν ἀφομοιοῖ, τὴν αὐτοῦ παρεμφαῖνον ὄψιν. Similarly with νοὺς. Its function is to receive forms, and this would be hindered and obstructed by the actual possession of any form of its own. Alex. Aphr. *De An.* 84, 15 παρεμφαινόμενον γὰρ τὸ οἰκείου εἶδος κωλύει τὴν τοῦ ἀλλοτρίου λῆψιν, Them. 94, 21 H., 174, 1 Sp. οὕτω γὰρ ἂν ῥᾶστα γνωρίζοι μηδενὸς οἰκείου παρεμφανομένου καὶ συννέπαρχοντος· κωλύσει γὰρ καὶ ἀντιφράξει τὸ ἐννέπαρχον εἶδος τὰ ἄλλα ὥσπερ ἀλλότρια, Simpl. 226, 6 ἔστι γὰρ τις πρὸς ἄλλα τοῖς εἶδεσιν ἀντίθεσις, δι' ἣν τὸ καθ' ὅτι οὖν αὐτῶν οὐσιωμένον παραποδισθήσεται πρὸς τὴν τῶν λοιπῶν ὑποδοχὴν, ἀντιφράττοντος ἢ ἀντιφράξοντος τοῦ ἐννέπαρχοντος πᾶσιν αὐτοῖς. The present tense κωλύει calls for some explanation. If A. is describing what does not take place, a future or an optative with ἂν, if not a past indicative with ἄν, would seem to be required. Themistius, just cited, has κωλύσει καὶ ἀντιφράξει, which Prof. H. Jackson has adopted in his *Texts*, p. 93: cf. 425 a 22 ἔσται. But it is best to take the sentence as a general statement with respect

to the validity of a given inference, without any reference to the truth or falsehood of the premisses, *παρεμφαινόμενον* replacing *εἰ παρεμφαίνεται* and not *εἰ παρενεφαίνετο* or the like: cf. Plato, *Phaedr.* 228 A *εἰ ἐγὼ Φαῖδρον ἀγνοῶ, καὶ ἐμαυτοῦ ἐπιλέλησμαι. ἀλλὰ γὰρ οὐδέτερά ἐστι τούτων.* It was probably the difficulty of the tense which led some scholars to explain the sentence in a wholly different way, making τὸ ἀλλότριον the subject, agreeing with *παρεμφαινόμενον*: and no doubt it is grammatically more natural to take *παρεμφαινόμενον* and τὸ ἀλλότριον together. Thus Argyropylus translates: *alienum nanque, cum apparet iuxta, prohibet atque seiungit.* So also Teichmüller, *Studien zur Geschichte der Begriffe*, p. 333 sqq. *note*, followed by Wallace *ad hunc locum*, p. 266. But, if the sentence is so taken, what is the object of *κωλύει*? What is hindered? Presumably the mind is hindered from thinking. So at least Wallace: "the side light and radiance of a foreign unrational object would obstruct and interfere with the action of reason." My friend, Miss M. Alford, would answer the question as follows: "With *κωλύει* I think the subject must be τὸ ἀλλότριον, and the object unexpressed, being supplied from τὸ ἀλλότριον, which implies another ἀλλότριον correlative to it: 'that which is foreign (to another thing) debars and blocks out (that other thing)'; the fact that any νοητὸν εἶδος will be foreign to some of the πάντα being taken for granted. I find it difficult to believe that a general statement as to what (always) happens—and this must, I think, be the force of the present *κωλύει*—should have as subject 'it,' 'the thing mingled with νοῦς,' when the existence of this thing is denied."

In *ἀντιφράττει* I see nothing more than a stronger *κωλύει*, "excludes," "bars out." A similar use of both verbs occurs Theophr. *frag.* 3, *De Igne* § 49 καὶ ἐὰν ἐπιβάλης τι ἐπὶ τὸ ὕδωρ θερμαίνεται θάπτον ἢ ψιλόν· οἷον γὰρ ἀντιφράττει καὶ κωλύει διατρίβειν τὸ θερμὸν ὥσπερ τὰ ἐπιπωματιζόμενα, where, in spite of the homely subject, there is perhaps a reminiscence of our passage. Trend., however, was possessed with the idea that the simile must be from light. He accordingly cites passages from A., where *ἀντιφράττει*, *ἀντίφραξις* are used of eclipses: *Anal. Post.* II. 2, 90 a 15 sq., *De Caelo* II. 13, 293 b 23 sqq., *Meteor.* II. 8, 367 b 19 sqq., *ib.* I. 8, 345 a 29 sqq. But in an eclipse it is a foreign body (the shadow of the earth in an eclipse of the moon) which obscures and eclipses the light. Cf. *Metaph.* 1044 b 11 ὥς κινήσαν καὶ φθείραν τὸ φῶς. And, as Teichmüller and Belger (2nd edition of Trend., p. 386) pointed out, since this foreign body shuts out the light, Trend. is inconsistent in taking the source of light as a parallel to νοῦς. If the simile is from an eclipse, τὸ ἀλλότριον must be the subject of *ἀντιφράττει*, not, as Trend. supposed, the accusative after the verb: as Belger puts it, "neque enim lux, cuius νοῦς similis, sed corpus alienum obstruit luci, quod quidem eo ducit, ut ἀλλότριον nominativum putes, evanescat propria τοῦ ἐμφαίνεσθαι vis." In fact, if in this sentence A. is influenced by *Timaeus* 50 A—51 A, there is no need to look for any other metaphor than that of a plastic mould assuming successively distinct shapes, a metaphor which Plato also uses *Theaet.* 191 D—192 A, the impression of a seal upon wax 424 a 19 sqq., 435 a 2 sqq. being only a particular application. This simile is one of the two which frequently recur in the attempt to conceive how knowledge is acquired, whether through sense or intellect. The other is from grasping or apprehension, 407 a 10 sqq., *Metaph.* 1051 b 23—25, 1072 b 21. The simile from light in Plato, *Rep.* VI. and VII., resolves itself upon closer analysis in its ultimate explanation into the latter, Plato, like Empedocles before him and A. after him, having his own theory as to the nature of the physiological process of vision.

a 21 ὥστε μὴδ' αὐτοῦ...22 ὅτι δυνατόν. The *μηδὲ* goes, not with αὐτοῦ, but

with εἶναι φύσιν, "mind has not even any other characteristic save this, that it has potentiality." In other words ἡ φύσις τοῦ νοῦ ἐστὶ τὸ δύνασθαι, τὸ δυνάμει εἶναι. Cf. 417 a 26, 28, *Metaph.* 1019 a 33 sqq., 1046 a 11 ἡ μὲν γὰρ τοῦ παθεῖν ἐστὶ δύναμις, ἡ ἐν αὐτῷ τῷ πάσχοντι ἀρχὴ μεταβολῆς παθητικῆς ὑπ' ἄλλον ἢ ἢ ἄλλο, 1046 a 20 δυνατὸν γὰρ ἐστὶ καὶ τῷ ἔχειν αὐτὸ δύναμιν τοῦ παθεῖν καὶ τῷ ἄλλο ὑπ' αὐτοῦ. The last two citations show the close connexion of δύναμις with πάσχειν. A. puts his own interpretation upon freedom from admixture with objects of thought. The predicate ἀμιγές he interprets as pure potentiality. Νοῦς is, then, actual only in the act of thinking. Similarly, when discussing primary matter, he argues that this also, if it is destitute of all positive qualities, must be a pure potentiality, *Metaph.* 1029 a 7—26. The potentialities in the two cases are quite distinct: the one is a potentiality of receiving νοητὰ εἶδη, the other a potentiality of receiving the elemental qualities, hot, cold, wet, dry.

a 22. ὁ ἄρα καλούμενος τῆς ψυχῆς νοῦς. The use of the participle here and in 407 a 4 does not imply that the term νοῦς is misused, though this is sometimes the case, e.g. τὰ καλούμενα στοιχεῖα. It seems to import "νοῦς in the sense in which we use the word," probably with a suggested contrast to the usage of Anaxagoras or to "νοῦς in the special sense." Thus the meaning might almost be called the opposite of that in which the word implies misuse. Cf. *Metaph.* 1058 a 21, where καλούμενον seems to refer more or less definitely to καλῶ in 1057 b 38. A. is rather endeavouring to mark out more exactly the function of thought, as the relative sentence shows. Cf. 432 b 26 τὸ λογιστικὸν καὶ ὁ καλούμενος νοῦς.

a 23. ὃ διανοεῖται καὶ ὑπολαμβάνει, "thinks and frames conceptions," such conceptions, or more vaguely, "views," being the result of the reasoning process: mentis operatio [διανοεῖσθαι], quae in ὑπόληψιν desinit de rebus, quales apparent, certi quid definitem (Trend.). For the difference between ὑπόληψις and διάνοια cf. *note* on 427 b 16. The form of the sentence recalls 429 a 10. In neither passage is simple apprehension (ἡ τῶν ἀδιαίρετων νόησις) prominent, though γνώσις and τὸ φρονεῖν (as used in *De A.*) are vague enough to include it. The fact is that though we may be able to think ἀδιαίρετα, as soon as we interpret such thoughts, even to ourselves, our thinking invariably assumes the form of τι κατὰ τινας. "I have the notion good" is translated into "This is good," as "I have the sensation of redness" is translated into "This is red."

a 24. οὐθέν ἐστιν ἐνεργεῖα τῶν ὄντων πρὶν νοεῖν. This is restated 429 b 30 sqq. The statement here made of νοῦς may be taken as parallel to the distinction elaborated in II., c. 5 respecting αἴσθησις, viz. that there is both potential sense, ἡ κατὰ δύναμιν αἴσθησις or δύναμις and ἡ κατ' ἐνέργειαν αἴσθησις or ἐνέργεια: cf. 431 b 24—28. Potentiality passing into activity is a formula applicable to both sensation and intellection. See passage from Them. quoted in *note* on 429 a 16.

a 24. διδ: a new deduction, not a new proof of an old one, as some have supposed.

a 24 μεμείχθαι... 25 τῷ σώματι. This plainly follows from the statement made 429 a 18, that νοῦς is ἀμιγής in the wider sense preferred above. If, as Simpl. says, νοῦς is in its own nature πρὸς πάντα ἀμιγής, it is so in respect of the body. The phrase μεμείχθαι τῷ σώματι occurred 407 b 2, where A. was criticising the indissoluble union of body and soul, there identified with νοῦς (a 4 sq.) in the *Timaeus*. The possibility that some affections of soul were peculiar to soul itself and not, like the rest, common to soul and body was distinctly before us I., c. 1: see 402 a 9 sq., 403 a 3—11. We must, however, remember that there is no reason why some parts of the soul should not be separated from the body,

if they are not the actualities of any body whatever, 413 a 6 sq. True mixture is of body with body, one condition being similarity of matter: cf. *De Gen. et Corr.* I. 10, Them. 94, 30 sq. H., 174, 13 sq. Sp. Mixture in this sense is out of the question when one of the factors is the intellective soul. If νοῦς were a corporeal thing mixed with the body, it would be present in actuality and not potentially: cf. Them. 94, 31 H., 174, 14 sq. Sp. This is not, however, what A. means, for, the whole soul having been defined in II., c. 1 as the entelechy or perfection of body, the part of it which thinks can no more be body than the soul itself, 414 a 20 σώμα μὲν γὰρ οὐκ ἔστι, σώματος δέ τι. But the term "mixture" receives a wide extension of meaning and is used again improperly of νοῦς b 28 *infra*. Cf. Theophr. apud Them. 108, 24 H., μικτόν, 28 διὰ τὴν μίξιν of the union of the two intellects. An incorporeal thing can be said *per accidens* to be mixed with body, and this improper extension of the term "mixture" may be used to denote the union of form and matter in the concrete thing. It is in this sense that A. denies of intellect admixture with the body. As part of the soul, intellect resides in the whole body and uses it as its organ. If not exactly "mixed with" the body, intellect is at all events dependent upon the body, without which it could not be supplied with mental images. It must therefore be in respect of its operation that we are now considering the question of admixture or non-admixture with the body. The reception of forms which constitutes thinking may take place without the intervention of the body, and A. would point to profound meditation as a proof of this. It is, as Zeller says, "free and unfettered by the body": cf. Plato, *Phaedo* 64 E—66 A.

a 25 ποιός τις γὰρ...26 θερμός. It would cease to be ἀμυγής. Some of the properties of the body with which it is *ex hypothesi* mixed would be transferred to the whole or compound of which an ingredient is ὁ νοῦς. There can be no μείζις in the proper sense of the term between any one of the senses and the bodily part in which it resides. We have μείζις or κράσις τῶν ἐναντίων in flesh and other bodily parts: we have also δύναμις καὶ εἶδος ἐπιγινόμενον τῇ κατὰ τὸν τοιόνδε λόγον κράσει τῶν σωμάτων (Alex. Aphr. *De An.* 25, 2 sq.): and by an improper use of the term we apply to the δύναμις καὶ λόγος the predicates which properly belong only to the μείζις or κράσις. The difficulty in regarding νοῦς, for the sake of argument, as hot or cold is no greater than in regarding soul as moved: cf. 408 a 30—33. As to the operation of intellect, a comparison with sense at once presents a difference. In respect of the intelligible object, intellect has already been declared to be unaffected and unmixed, and ποιός would contradict this. If intellect, like sense, were dependent on some corporeal condition for the reception of the object, it would be mixed with intelligibles and affected by them, which has been denied. That it is unmixed with body in its operation means, as above stated, that it receives intelligible objects without any reception occurring in the body. When the form is received in the animate compound of body and soul, this animate compound must be endued with peculiar qualities, with tangible qualities at any rate, and these constitute the reason why the form is received. In order that the eye may be receptive of colour, it must be affected with a peculiar and natural blending of primary qualities and may be said to be naturally ποιός, and in one respect mixed, although in respect of colour it is unmixed. But intellect has to be absolutely unmixed in respect of all things; therefore it must receive intelligible forms alone and be unmixed with body in its operation. Otherwise it would be mixed with something or other, with some natural blending of hot or cold, which would constitute the reason why it receives its intelligible forms, and it would no longer satisfy the condition ἀμυγῇ εἶναι, laid down as necessary in order that it may think all things.

a 26. ἡ κὰν ὄργανόν τι εἴη, int. αὐτῷ, i.e. τῷ νῷ. If it were trammelled with the body, there would also be some particular part of the body appropriated to it for its use, as the whole soul uses the whole body 407 b 26; some part, in which, to the exclusion of the rest, the reception of the intelligible form takes place. The analogy of the senses points to this conclusion: cf. 424 a 24 αἰσθητήριον δὲ πρῶτον ἐν ᾧ ἡ τοιαύτη δύναμις. The primary qualities are differently blended in different parts of the body, and hence the special organs of sense: e.g. only in the eye, not in flesh or in any other part, are they so blended as to allow the reception of the forms of colour. In bone there is too much earth to allow the reception even of tangibles, 435 a 24 sq. A sense-organ, in fact, is merely a part of the body appropriated for the reception of forms of a given kind.

a 27. οὐθέν ἐστιν, int. ὄργανον. Cf. 408 a 12, where it is implied that νοῦς is not a σύνθεσις of bodily parts, and 411 b 18 sq., where we find that it is not that which holds together or gives unity to any particular part of the body. But the images (φαντάσματα) without which it is impossible to think? The last chapter proved that they are κινήσεις: they go on ἐν τοῖς αἰσθητηρίοις, but are not themselves bodily parts.

For this passage cf. Them. 94, 30 H., 174, 13 Sp. σώματος γὰρ πρὸς σῶμα μίξις ἐστίν. ἀνάγκη δὲ σῶμα ὑπάρχοντα ἐνεργεῖα εἶναι καὶ μορφήν ἔχειν οἰκείαν. ἀλλ' οὐδὲ ὄργανον ἂν χρῆτο τῷ σώματι, ὥσπερ ἡ αἴσθησις· καὶ γὰρ οὕτως ἀπολαύσεται τῆς τοῦ ὄργανου ποιότητος, ἢ συντηρήσουσα ἀεὶ ταῖς ἐνεργείαις αὐτοῦ τὰ ἄλλα εἰδὴ καλύψει. δῆλον δὲ μάλιστα ἐκ τῆς αἰσθητικῆς τοῦτο δυνάμει· αὕτη γὰρ σῶμα μὲν οὐκ ἐστίν, ἀλλ' ἐπειδὴ χρῆται ὅλως ὀργάνοις σωματικοῖς, συναπολαύει τοῖς τοῦ πάθους, Simpl. 227, 10—32, especially 16 ὅτε ἡ τοῦ ὄργανου ζωὴ καὶ μεμιγμένη τῷ σώματι καὶ συμπεφυρμένη ταῖς ἐν αὐτῷ ποιότησι. Sophonias infers from the imputation of a property like cold or heat that A. in a 25 is treating νοῦς as a σῶμα and must therefore be at a different point of view in a 26 when he desiderates an organ: (124, 30) εἰ γὰρ μέμικται, ἢ κατὰ κράσιν ἐμμέμικται ἢ ὡς εἰδὸς ἐστὶ τοῦ σώματος, ὥσπερ τοῦ αἰσθητηρίου ἢ αἴσθησις καὶ τοῦ πεπτικοῦ ἢ πέψις. ἀλλ' εἰ κατὰ κράσιν, ποῖός τις ἂν γίγνοιτο, ψυχρὸς ἢ θερμὸς· εἰ δὲ ὡς εἶδος, κὰν ὄργανόν τι εἴη αὐτῷ, ὥσπερ ἐκεῖ αἰσθῆται μὲν τὸ πνεῦμα ἢ τὸ αἰσθητήριον, πέψει δὲ τὰ οἰκεία. In other words, Soph. treats a 26 ἢ before κὰν as disjunctive and introducing an alternative hypothesis. This furnishes a simpler explanation of a 25 ποῖός... a 26 θερμὸς, but we should have expected ἢ...ἢ, if A. were considering two alternative hypotheses as to the nature of μίξις, and it seems rather late in the treatise to be entertaining so crude a conception as a corporeal soul or part of soul.

a 27. τόπον εἰδῶν. No one particular passage can be cited for this expression, but it is quite in the spirit of Plato's idealism. In the *Parmenides* the phrases ἐν ψύχαις (132 B), ἐν ἡμῖν (133 C) and παρ' ἡμῖν (134 A), said of the ideas, whether representing Plato's own mature view or not, are an approximation to the language of the text. A.'s approval here is borne out by 431 b 28 sq., 417 b 22—24, 410 a 10—13. In all three passages A. has himself used the words ἐν τῇ ψυχῇ, which in our present passage he proceeds pedantically to qualify.

a 28. οὔτε ὅλη, int. ψυχῇ. To complete the sentence we must supply τόπος εἰδῶν ἐστίν (or ὁρθῶς ἂν λέγοιτο). As it is quite certain (407 a 3 sqq.) that Plato meant the thinking soul, this criticism is merely a verbal correction and hardly touches the doctrine.

a 28 οὔτε... 29 δυνάμει. The forms occupy the soul not actually, but potentially. The correction entirely transforms the doctrine. This quality of being the place of forms Them. claims for the sensitive soul as well as for νοῦς: 95, 7 H., 175, 6 Sp. πλὴν ὅτι οὔτε ὅλη ἢ ψυχῇ, ἀλλὰ αἱ δύο μόναι δυνάμεις καθ' ἣν τε νοοῦμεν καθ' ἣν τε



αἰσθανόμεθα, οὐθ' οὕτω τόπος ὥς περιέχειν, ἀλλ' ὥς γίνεσθαι πως ἂ νοεῖ καὶ ὧν αἰσθάνεται.

429 b 1. ἐκ τοῦ σφόδρα αἰσθητοῦ, "after it has been affected by a sensible object in excess." This meaning of the preposition ἐκ, "immediately after" or "following," can be amply illustrated: cf. *Metaφh.* 1023 b 6 μεθ' ὃ τῷ χρόνῳ [int. λέγεται τὸ ἕκ τινος], οἶον ἐξ ἡμέρας νύξ καὶ ἐξ εὐδίας χειμών, *De Gen. An.* I. 18, 724 b 1 ὥς τότε μετὰ τότε, οἶον ἐκ τῶν Παναθηναίων ὁ πλοῦς, *Hist. An.* IV. 10, 537 a 17 φέρεται γὰρ ὥσπερ ἐξ ὕπνου ὄντα. οἶον ψόφου, int. οὐ δύναται αἰσθάνεσθαι.

b 4. τὰ ὑποδεέστερα, int. τῶν νοητῶν. The inferiority consists in being less purely objects of thought (νοητά), as distinguished from sensibles (αἰσθητά); in other words, things that are less abstract. For A.'s position in regard to the various degrees in which the subjects of different sciences are treated as more or less abstract see *Metaφh.* 1077 b 22 sqq., 1078 a 5—17. See also *notes* on 402 a 2.

b 5. οὐκ ἄνευ σώματος. Cf. *De Sensu* I, 436 b 6 ἡ δ' αἰσθησις ὅτι διὰ σώματος γίγνεται τῇ ψυχῇ, δῆλον καὶ διὰ τοῦ λόγου καὶ τοῦ λόγου χωρὶς, *De Somno* I, 454 a 7 ἐπεὶ δ' οὔτε τῆς ψυχῆς ἴδιον τὸ αἰσθάνεσθαι οὔτε τοῦ σώματος (οὐ γὰρ ἡ δύναμις, τούτου καὶ ἡ ἐνέργεια· ἡ δὲ λεγομένη αἰσθησις, ὥς ἐνέργεια, κίνησις τις διὰ τοῦ σώματος τῆς ψυχῆς ἐστὶ), φανερόν ὥς οὔτε τῆς ψυχῆς τὸ πάθος ἴδιον, οὐτ' ἄψυχον σῶμα δυνατόν αἰσθάνεσθαι: this is a neat summary of the entire theory of sensation which occupied us almost exclusively from II., c. 5 to III., c. 3. A. is in a position to point out the organs of the special senses and, though he cannot do this with certainty for the organ of the central sense, he is convinced that it is some internal bodily part.

b 5. ὁ δὲ [int. νοῦς] χωριστός [int. τοῦ σώματος]. See 429 a 24 sq. It would seem that this reference must be intended rather than a 18; at least, if the explanation given of a 18 is correct. If so, A. has already demonstrated to his own satisfaction (viz. at a 24 sq., though without using precisely the same terms) that νοῦς is not so inextricably entangled with the body that it cannot be separated from it. The canon laid down 403 a 10 was: it is possible for the soul to be separated from the body, if any function of soul is peculiar to the soul itself and not shared by it with the body. Cf. 413 a 6 sq., b 24 sqq. With this agrees *De Gen. An.* II. 3, 737 a 8 τὸ σπέρμα τὸ τῆς ψυχικῆς ἀρχῆς, τὸ μὲν χωριστὸν ὃν σώματος, ὅσοις ἐμπεριλαμβάνεται τὸ θεῖον (τοιοῦτος δ' ἐστὶν ὁ καλούμενος νοῦς), τὸ δ' ἀχώριστον (the seed or germ of the sensitive and nutritive principles or faculties of the soul). A. is there treating of the origin of life in the embryo. Cf. also *De Gen. An.* II. 3, 736 b 28 οὐθὲν γὰρ αὐτοῦ τῇ ἐνέργειᾳ κοινωνεῖ σωματικῇ ἐνέργειᾳ. If the function of thinking is not shared with the body, it is possible that the soul, *quā* thinking soul, ἢ νοητικῇ, is separable from, or independent of, the body.

b 5. ὅταν δ' οὕτως ἕκαστα γένηται. Cf. *supra* 429 a 24 οὐθὲν ἐστὶν ἐνέργεια τῶν ὄντων πρὶν νοεῖν, which implies that in the actual operation of thought the mind does become τὰ ὄντα, i.e. τὰ νοητά. Cf. 430 a 1, 430 a 3 sq., 430 a 19 sq., 431 b 20 sqq. If γένηται implies becoming or change, we must beware of supposing that this is ἀλλοίωσις in the physical sense. See 407 a 32 sqq., *Phys.* VII. 3, 247 b 1 οὐδ' αἱ τοῦ νοητικοῦ μέρους ἕξεις ἀλλοιώσεις, 247 a 28 ἀλλὰ μὴν οὐδὲ τῷ διανοητικῷ μέρει τῆς ψυχῆς ἡ ἀλλοίωσις, *ib.* b 9 ἡ δ' ἐξ ἀρχῆς λήψις τῆς ἐπιστήμης γένεσις οὐκ ἔστιν· τῷ γὰρ ἡρεμήσαι καὶ στήναι τὴν διάνοιαν ἐπίστασθαι καὶ φρονεῖν λέγομεν. εἰς δὲ τὸ ἡρεμεῖν οὐκ ἔστι γένεσις· ὅλως γὰρ οὐδεμιᾶς μεταβολῆς. The mention of λήψις τῆς ἐπιστήμης is especially significant in view of 429 b 8 πρὶν μαθεῖν ἢ εὑρεῖν. We must assume for the thinking soul the twofold

meaning of μεταβολή and ἀλλοίωσις elaborated 417 a 21 sqq. for the sensitive soul on the analogy of ὁ ἐπιστήμων. Here, as there, we are to understand *alteratio perfectiua, non corruptiua*.

b 6. λέγεται, int. ἐπιστήμων. Cf. 424 a 23, *note*. See also *Metaph.* 1048 a 32 λέγομεν δὲ δυνάμει... a 34 ἐπιστήμονα καὶ τὸν μὴ θεωροῦντα, ἐὰν δυνατὸς ᾗ θεωρῆσαι.

b 7. ὅταν δύνῃται, int. ὁ ἐπιστήμων, although some commentators prefer to understand ὁ νοῦς: so Philop. 524, 19—22, Simpl. 229, 37 sqq., and so apparently Alex. Aphr. *De An.* 85, 25 ὅταν γὰρ ἐν ἔξει γένηται διὰ τὰς συνεχεῖς ἐνεργείας τοιαύτη, ὥς δι' αὐτοῦ λοιπὸν ἐνεργεῖν δύνασθαι. But Them., whose paraphrase here appears to me to betray an acquaintance with Alex. Aphr., seems to have taken the verb with ὁ ἐπιστήμων: 95, 12 H., 175, 15 Sp. *τηνικαῦτα τελεώτερος γίνεται νοῦς ἀνάλογον ἔχων τῷ ἐπιστήμονι, ὅστις τὰ θεωρήματα τῆς ἐπιστήμης συνειληχῶς οἷός τε καθ' ἑαυτὸν ἐνεργεῖν ἕκαστον αὐτῶν ἰδίᾳ προχειριζόμενος, καὶ οὔτε διδασκαλίας ἔξωθεν τινος οὔτε γυμνασίας δεόμενος*. From the words of Theophrastus apud Prisc. *Lyd.* 31, 8 ὥς ἐπιστήμων κατ' ἐνέργειαν λέγεται, τοῦτο δὲ συμβαίνειν φανέν ὅταν δύνῃται κτέ. it is difficult to determine how he took the sentence. Probably he made νοῦς the subject to δύνῃται δι' αὐτοῦ ἐνεργεῖν.

b 7. δι' αὐτοῦ, i.e. without further instruction, unaided. When the ἔξις is formed, the savant can apply his knowledge at will, *βουληθεὶς δυνατὸς θεωρεῖν* 417 a 27. It is, in fact, this characteristic of free and self-determined energy that differentiates the higher form of δύναμις, called ἔξις, from the primitive δύναμις of which it is a development.

b 8. ἔστι μὲν καὶ τότε δυνάμει πως. The subject is νοῦς, as in 429 b 3. καὶ τότε="then also." Intellect can be said to be in potentiality in two different senses: (1) as it is used of the child before actually thinking at all, when νοῦς is destitute of the ideas which are to become its content; (2) after it has begun to think and has thus acquired the ideas, e.g. of a horse or a triangle, by learning or discovery, the corresponding stage being reached by the αἰσθητικὸν at birth, 417 b 16 sqq. At this stage the νοητὰ in the soul are in that condition of potentiality and actuality in which αἰσθητὰ are when they cause perception, i.e. they are in a manner potential before and until, but actual in, the act of thinking. Now αἰσθητὰ are already ἐνεργεία or ἐντελεχεία ὄντα in the sense required by 417 a 17 sq., 431 a 3—5: yet still they are δυνάμει in relation to the more complete actuality which is reached by their causing perception, 425 b 26 sq. In the same way at the stage when it is *in habitu* νοῦς can without external aid think the νοητὰ that are in itself, in one sense δυνάμει ὄντα and in another sense ἐνεργεία ὄντα, and thereby think itself, 430 a 2 sq. There is no difficulty about the first sense of δυνάμει, while for (2) we have the analogy of ὁ ἐπιστήμων after he has acquired the faculty, ἔξις, of knowledge: he is then potentially a savant, as explained in II., c. 5, because he can apply his knowledge at will, 417 a 27 sqq., and his change from potentiality to active operation is (417 a 32) ἐκ τοῦ ἔχειν τὴν αἰσθησιν ἢ τὴν γραμματικὴν, μὴ ἐνεργεῖν δ' εἰς τὸ ἐνεργεῖν. Cf. also *Phys.* VIII. 4, 255 a 33 ἔστι δὲ δυνάμει ἄλλως ὁ μανθάνων ἐπιστήμων καὶ ὁ ἔχων ἥδη καὶ μὴ θεωρῶν. So, too, νοῦς can think at will, 417 b 24 διὸ νοῆσαι μὲν ἐπ' αὐτῷ, ὁπόταν βούληται. Into the process of learning and acquiring knowledge A. does not enter here. He explains it *Anal. Post.* II., c. 19, *Metaph.* A., c. 1, dwelling on the gradual formation of universals, for which sensation, imagination and memory are required. Cf. Alex. Aphr. *De An.* 85, 11—25, especially (20) ἐγγίνεται δὲ ἡ τοιαύτη ἔξις τῷ νῷ τὴν ἀρχὴν κατὰ μετάβασιν ἀπὸ τῆς περὶ τὰ αἰσθητὰ συνεχοῦς ἐνεργείας ὥσπερ ὄψιν τινὰ ἀπ' αὐτῶν λαμβάνοντος τοῦ καθόλου θεωρητικῆν, ὃ κατ' ἀρχὰς μὲν

νόημα καὶ ἔννοια καλεῖται, πλεονάσαν δὲ καὶ ποικίλον καὶ πολύτροπον γινόμενον, ὡς δύνασθαι καὶ χωρὶς τῆς αἰσθητικῆς ὑποβάθρας ποιεῖν τοῦτο, νοῦς ἦδη. Cf. also Them. 95, 9 H., 175, 10 Sp. οὗτος τοῖνον ὁ δυνάμει νοῦς γίνεται μὲν καὶ ἐν τοῖς νηπίοις· ὅταν δὲ ἀπὸ τῶν αἰσθητῶν καὶ τῶν ἀπὸ τούτων φαντασιῶν καὶ τῆς περὶ ταῦτα γυμνασίας τὸ καθόλου δύνηται θηρεύειν καὶ συνάγειν τὸ ὅμοιον ἐν τοῖς ἀνομοίοις καὶ τὸ ταῦτόν ἐν τοῖς διαφόροις, τηνικαῦτα τελεώτερος γίνεται νοῦς... (16 H., 20 Sp.) ἔστι μὲν οὖν καὶ τηνικαῦτα δυνάμει, οὐ μὴν ὁμοίως καὶ πρὶν μαθεῖν ἢ εὐρεῖν· ἐγγίνεται γὰρ οἷον ὅψις αὐτῷ πρότερον οὐκ ἐνοῦσα ὁρατικὴ τῶν ὁμοίων καὶ τῶν ἀνομοίων καὶ ταῦτο καὶ ἐτέρου καὶ ἀκολουθου καὶ μαχομένου, καὶ αὐτὸς δὲ ἑαυτὸν τηνικαῦτα δύναται νοεῖν.

b 9. καὶ αὐτὸς δὲ int. ὁ νοῦς.

b 9. αὐτὸν τότε δύναται νοεῖν. This conclusion is not at first sight easy to follow. Alex. Aphr. *De An.* 86, 14 sqq. gives the steps of the argument thus. Mind in active operation has for its object the intelligible form and is nothing else than the form which is its object. In thinking it becomes the intelligible form, and this form is the thinking mind itself: καὶ ἐπεὶ ἐστὶν ὁ κατ' ἐνέργειαν νοῦς οὐδὲν ἄλλο ἢ τὸ εἶδος τὸ νοούμενον, ὥσπερ καὶ ἐπὶ τῆς αἰσθήσεως ἐδείχθη, ὁ ἐν ἔξει νοῦς (οὗτος δὲ ἐστὶν ὁ νοεῖν ἐπ' αὐτοῦ δυνάμενος καὶ τὰ τῶν νοητῶν εἶδη λαμβάνειν κατ' αὐτά), οὗτος ἦδη δύναται καὶ αὐτὸν νοεῖν. ἐπεὶ γὰρ τὸ νοούμενον εἶδος αὐτός ἐστὶν, εἴ γε νοῶν ὁ νοεῖ γίνεται, ὁ ἄρ' ἔξιν ἔχων τοῦ τὰ εἶδη νοεῖν, οὗτος ἔξιν καὶ δύναμιν ἔχει τοῦ νοεῖν ἑαυτόν. ὁ γὰρ δύναται νοεῖν, τοῦτο αὐτὸ αὐτὸς νοῶν γίνεται. I append in outline the substance of Zabarella's note. Mind thinks itself, not directly, but in contradistinction to other things, νοητά, 430 a 2 sq., and so *per accidens*: cf. *Metaph.* 1074 b 35 sq. When Alex. Aphr. says εἴ γε νοῶν ὁ νοεῖ γίνεται, this must not be distorted to mean, in the words of Zabarella, "penitus idem quod res intellecta, et sicut eam intelligit se intelligit." For from this it would follow that intellect knows itself primarily and *per se*, not secondarily and *per accidens*. It thinks other νοητὰ *per se* because they stand to it as its primary objects, and would think itself *per se* if it were entirely identical with them. Experience shows that the mind thinks other things without any self-consciousness. The identity of intellect and thing thought must be understood as a mental, not a real, identity. For intellect is *realiter* always substance and form and never becomes transformed into another entity. In thinking it must be regarded as standing to the εἶδος νοητὸν as matter to form and, paradoxical as this may appear when we know that it is also εἶδος εἰδῶν, it is δεκτικὸν τοῦ εἶδους, 429 a 15. In this respect, that its real nature remains unchanged, it may be compared with primary matter. Hence intellect must know itself as different from the things which it thinks. It knows itself, then, by reflecting, or in so far as it reflects, upon its own operation. It knows that it thinks; it knows therefore that it has a nature adapted to become everything, which was *in potentia* before actually thinking. It knows itself indirectly, i.e. non per speciem propriam sed per alienam. So too, we must remember, sense perceives substance not directly, but *per accidens*, 418 a 20 sqq. It is implied in our passage that it is not until it has acquired habits that intellect is adapted to think itself. Note how the bounds of thought and knowledge are here extended. Above, human intellect has for its primary object all things except itself: now, indirectly, it also knows itself. Note also that to know itself belongs alike to sense (III., c. 2 *ad init.*) and intellect.

**429 b 10—22.** Taking into account the familiar distinction between the concrete thing and its form or quiddity, we may say that it will be either a. different faculty or a different attitude of the same faculty which apprehends the one and the other. The qualities of flesh are judged by sense, the quiddity of

flesh by something distinct, by a faculty which is either separated from sense, or related to it as the bent line when it is straightened out is related to its former self [§ 7]. The same is true of the objects of mathematics. That which is straight answers to the concrete thing, the "snub-nosed," having extension for its matter [ὕλη νοητή]. But its quiddity, the straightness of the straight (always supposing we distinguish between the straight and its quiddity) is judged either by a different faculty from that which cognizes the straight, or by the same faculty in another relation. And, generally, the operations of intellect upon different objects vary with the greater or less degree in which form is implicated with matter in these objects, i.e. according as such objects are εἶδη ἔνυλα, or εἶδη ἀνυλα [§ 8].

429 b 10. ἄλλο ἐστὶ τὸ μέγεθος καὶ τὸ μεγέθει εἶναι. Cf. *Metaph.* Z., c. 4, especially 1030 a 6 sqq. This is the distinction between a thing and its *τί ἦν εἶναι* or quiddity, i.e. a thing in the concrete and a thing in the abstract. See notes on 412 b 11, 13. καὶ ὕδωρ καὶ ὕδατι εἶναι. In calling attention to this distinction A. uses two examples; the former, magnitude, taken from the region of mathematics, τὰ ἐν ἀφαιρέσει ὄντα (429 b 18), the latter, water, from the region of physics. The distinction between the thing and its quiddity is more easily seen in the latter region. Water, like flesh, which replaces it as the typical example in b 12 sq., is a compound, σύνολον, of form and matter (412 a 6 sqq.), its quiddity, aquosity, being the form. The relation of magnitude and its quiddity is similar to that between τὸ εὐθὺς and τὸ εὐθεῖ εἶναι explained below in note on 429 b 18. For the omission of the article before ὕδατι εἶναι cf. 416 b 12.

b 12. ἐπ' ἐνίων γὰρ. Cf. *Metaph.* 1031 b 12, 1032 a 5 sq. It appears that this is the case ἐπὶ τῶν πρώτων καὶ καθ' αὐτὰ λεγομένων, e.g. good, beautiful, Being, One, infinity, curvature. If the concrete and the abstract are thus identical, the concrete is not a true concrete. Cf. *Metaph.* 1037 a 33 καὶ ὅτι [int. εἰρηται] τὸ τί ἦν εἶναι καὶ ἕκαστον ἐπὶ τινῶν μὲν ταυτόν, ὥσπερ ἐπὶ τῶν πρώτων οὐσιῶν, οἷον καμπυλότης καὶ καμπυλότῃτι εἶναι, εἰ πρώτη ἐστίν. Λέγω δὲ πρώτην ἢ μὴ λέγεται τῷ ἄλλο ἐν ἄλλῳ εἶναι καὶ ὑποκειμένῳ ὡς ὕλη. ὅσα δ' ὡς ὕλη ἢ ὡς συνειλημμένα τῇ ὕλει, οὐ ταυτό and 1030 a 10 sq. τὸ σαρκὶ εἶναι. The apodosis begins here.

b 13. [καὶ] ἢ ἄλλῳ ἢ ἄλλως ἔχοντι κρίνει. I am unable to retain καὶ before ἢ either as "in fact" to emphasise κρίνει or as hinting at <καὶ κρίνει> καὶ κτέ., as if the sense were "judges the two and, what is more, judges them either with different instruments or etc." I suspect a confusion of compendia. On the analogy of 426 b 17, 430 b 24, the subject to be supplied here and in b 15, 17, 21 will be τὸ κρίνον, which is best understood as the person who judges, whether the judgment be through sense or intellect. This accords with A.'s own precept 408 b 13 sqq. and makes the use of the instrumental dative much simpler: cf. 426 b 14, 17, 23, 427 a 14, 431 a 20. Zeller (*Aristotle*, vol. II., p. 93, n. 6, Eng. Tr.) takes ὁ νοῦς to be the subject, which is extremely awkward at b 15, 17, since there Zeller has to explain that νοῦς knows sensibles by means of the sensitive faculty, while it is *per se* that it knows the form; in other words, the other faculty, either separable or in the relation of a straightened to a bent line, which νοῦς employs, is νοῦς itself. It must, however, be conceded that the words ὁ νοῦς once stood in cod. E after κρίνει, as they still stand in cod. L. If, on the other hand, by τὸ κρίνον we understand the person judging or discerning, since he is possessed of both faculties, he may, ἢ αἰσθητικός, employ the sensitive faculty for sensibles and, ἢ νοητικός, employ the intellect for forms or quiddities. With ἄλλῳ understand ἑκάτερον, while in ἄλλως ἔχοντι is implied τῷ αὐτῷ, by a

different instrument in the one case and in the other, ἄλλω καὶ ἄλλω, or by the same instrument in a different relation, τῷ αὐτῷ ἄλλως καὶ ἄλλως ἔχοντι. These words, which recur b 16, 20 sq., have the brevity of a formula. Most authorities have supposed sense and intellect to be the two faculties alluded to, and the whole discussion as far as b 22 to deal with the part they respectively play in intellectual apprehension. There can be no question that, according to A., we think as well as perceive concrete substance, e.g. τὸ μῆκος 430 b 7 sq., 12, τὸ σιμὸν 431 b 12 sqq. As Zeller puts it, l.c., "while the simple perception of the data of sense belongs to αἴσθησις, and not to νοῦς, yet every judgment relating to them is shared in by thought (νοῦς in the wider sense)....Conceptions, on the other hand, as such, universal thoughts limited to no individual experience, are known by reason *per se*, although the material for them is supplied by sense-perception." Since we know flesh and the like by sense and forms or quiddities by intellect, A. appears to be discussing the question, Are sense and intellect different or are they the same faculty in two different attitudes? The difference between the two faculties has been assumed all along (e.g. 413 b 24 sqq., 414 b 16 sqq.) on the ground that animals are found possessed of sensation but devoid of intellect. A. may be taking up the question, left undecided in 429 a 11, as to what is the kind and degree of separation between intellect and the rest of the faculties. It may seem strange that intellect should after all only be sense in a different relation, but many considerations favour such a view. Throughout the treatise A. has been hostile to the assumption of distinct "parts" of soul, and where he accepts it as a working hypothesis, it is under protest, e.g. 432 a 22 sqq. The essential unity of the soul is emphasised again and again. A. has an account to settle with himself, for in Book II., whenever he approaches the subject, his language is vague, e.g. 413 a 3 sqq., b 24 sqq., 415 a 6 sqq. Moreover, in others of his writings he approximates sense to thought. Thus sense is of the universal, ἡ δ' αἴσθησις τοῦ καθόλου ἐστὶν *Anal. Post.* II. 19, 100 a 17, though it be merely *per accidens*, *Metaph.* 1087 a 19 sqq.; while *Eth. Nic.* 1143 a 35 sqq. νοῦς πρακτικὸς is identified with αἴσθησις. On the whole this way of dealing with the passage presents less difficulty than to understand by ἡ...ἡ a hard and fast distinction for which the appropriate instances are not easy to discover. It might be plausibly held that, when we know physical objects, the instruments are quite distinct, viz. sense for the things and intellect for the quiddity, and that, when we know mathematical objects, both the thing and its quiddity are cognized by intellect, though in a different relation, since in the region of mathematics even the matter is intelligible matter. But the formula ἄλλω ἢ ἄλλως ἔχοντι confronts us *here*, where flesh has been the instance cited, so that this attempt breaks down (unless we are prepared to alter the text). Another hypothesis is that of M. Rodier. He assumes that flesh is an ambiguous term, including (1) particular flesh cognized by sense and (2) the universal flesh cognized by intellect. When we mean (1), flesh and its quiddity are judged by two different faculties: when we mean (2), flesh and its quiddity are discerned by the same faculty, viz. intellect, in two different relations. Ingenious as this is, it may be urged (1) that it is unlikely that A. would use σὰρξ ambiguously without calling attention to its two distinct meanings. His readers generally complain of the opposite fault and grow weary of the hair-splitting distinctions which he is continually repeating. (2) Water and flesh are things objectively existing, flesh universal is a conception, a fiction of the mind reached by abstraction, properly belonging to τὰ ἐν ἀφαιρέσει ὄντα, in spite of the fact that this phrase is conventionally restricted to the objects of the mathematical sciences. (3) There is no necessity

to take ἡ...ἡ as mutually exclusive, the second ἡ may be no more than "vel potius." When we call the faculty which cognizes the quiddity a distinct faculty, we must not forget that to speak of distinct faculties is an accommodation to popular usage and quite compatible with their all being τῷ ὑποκειμένῳ ἔν. (4) M. Rodier assumes that τὸ σύνολον τὸ καθόλου is necessarily apprehended by intellect. There is, however, as we have seen, an indirect apprehension of τὸ καθόλου by sense.

b 14. οὐκ ἄνευ τῆς ὕλης. This implies that τὸ σαρκὶ εἶναι, seeing that it is different from σάρξ (429 b 10), is ἄνευ τῆς ὕλης, or more precisely, the matter is no "part" of the quiddity of flesh (*Μεταφ.* 1035 a 1—7), though it is a necessary condition in order that the form or quiddity of flesh, which is εἶδος ἐνυλον, may exist (403 b 2 sq.), i.e. may appear in αἰσθητὴ οὐσία as ἡ κατὰ τὸν λόγον οὐσία of some σύνολον. It is owing to matter that a thing having a quiddity is different from the quiddity: *Μεταφ.* 1043 b 2—4. τὸ σιμόν, A.'s standing example of a concrete thing, τὸ κοῖλον being the corresponding abstract. There can be no σιμόν apart from ὕλη, no camosity without a nose. Cf. *Μεταφ.* 1030 b 28 εἰ μὲν γὰρ τὸ αὐτὸ ἐστι σιμὴ ρίς καὶ κοιλὴ ρίς, τὸ αὐτὸ ἔσται τὸ σιμόν καὶ τὸ κοῖλον· εἰ δὲ μὴ διὰ τὸ ἀδύνατον εἶναι εἰπεῖν τὸ σιμόν ἄνευ τοῦ πράγματος οὐ ἐστὶ πάθος καθ' αὐτό (ἔστι γὰρ τὸ σιμόν κοιλότης ἐν ῥίνι), τὸ ρίνα σιμὴν εἰπεῖν ἢ οὐκ ἔστιν ἢ δις τὸ αὐτὸ ἔσται εἰρημένον, ρίς ρίς κοιλὴ, 1025 b 32 sqq., 1064 a 23 sqq. See also *note* on 403 b 11.

b 14. τόδε ἐν τῷδε, this definite form in this definite matter, e.g. κοιλότης ἐν ῥίνι in the last citation. τῷ μὲν οὖν αἰσθητικῷ. We cannot get to know an external object without the aid of sense: 417 b 19—22, 431 a 3—5, 432 a 7 sq., *Anal. Post.* I. 18, 81 a 38 sqq. In *De Sensu* c. 6, A. asserts that hypothetical particles too small for sense to perceive are not νοητά: 445 b 15 ἔτι τίνα κρινοῦμεν ταῦτα ἢ γνωσόμεθα; ἢ τῷ νῷ. ἀλλ' οὐ νοητά, οὐδὲ νοεῖ ὁ νοῦς τὰ ἐκτὸς μὴ μετ' αἰσθήσεως. If ὁ νοῦς were, as some hold, the subject of 429 b 15 κρίνει, then, instead of the dative, we should certainly expect μετὰ τοῦ αἰσθητικοῦ.

b 15. τὸ θερμὸν καὶ τὸ ψυχρὸν. Cf. *Μεταφ.* 1025 b 34 sqq. εἰ δὲ πάντα τὰ φυσικὰ ὁμοίως τῷ σιμῷ λέγονται, οἷον...σάρξ. Flesh as τόδε τι or σύνολον is judged solely by sensibility. Here A. means the accidents by the aid of which particular concrete things are perceived by sense, for the substance of concrete things, we must remember, is not directly perceived, but only *per accidens*, indirectly, through the sensible forms of its accidents; and in the same indirect fashion τὸ καθόλου is perceived by sense, *Μεταφ.* 1087 a 19 sqq. When the eye perceives the whole coloured wall, it is only the colour which directly acts upon the eye. The addition of the clause καὶ ὄν...σάρξ shows that hot and cold are only adduced as examples of the essential qualities of flesh: what is said applies not only to hot and cold, but to any other qualities, the proportional adjustment of which constitutes flesh itself and makes it a sensible object, αἰσθητὸν τι. Cf. *Μεταφ.* 1001 b 32 ἀ δὲ μάλιστ' ἂν δόξειε σημαίνειν οὐσίαν, ὕδωρ καὶ γῆ καὶ πῦρ καὶ ἀήρ, ἐξ ὧν τὰ σύνθετα σώματα συνίστηκε, τούτων θερμότης μὲν καὶ ψυχρότης καὶ τὰ τοιαῦτα πάθη, οὐκ οὐσίαι. Cf. *ib.* 1070 b 11 "we may say that sensible bodies have heat for form and in another sense cold for privation, whilst for matter there is that which is primarily in itself the potentiality of hot and cold, these being substances as well as the compounds of which these are elements: in fact, any compound constituted, like flesh and bone, of hot and cold." Since hot and cold are αἰσθητά, the argument of 426 b 14 sq. applies: it must be by sense that they are known.

b 15 καὶ ὄν...ἰδὲ ἢ σάρξ, i.e. καὶ ἐκεῖνα ὧν λόγος τίς ἐστὶν ἢ σάρξ, those qualities of which flesh is a certain determining proportion, those qualities which, being

combined in a certain specific proportion, constitute flesh. The particular proportion which determines the proper adjustment (temperies) of flesh is λόγος τῆς μείξεως: cf. 408 a 14 οὐ γὰρ τὸν αὐτὸν ἔχει λόγον ἡ μείξις τῶν στοιχείων καθ' ἣν σὰρξ καὶ καθ' ἣν ὄσπουν, 410 a 1 οὐ γὰρ ὁπωσοῦν ἔχοντα τὰ στοιχεῖα τούτων ἕκαστον, ἀλλὰ λόγῳ τινὶ καὶ συνθέσει. What A. says of the accidents is said of the individual compound perceptible to sense owing to these accidents, accidents and compound being in the same grade of cognoscibility by νοῖς. Two of the four elements which enter into the composition of flesh are prominently mentioned, viz. fire and earth. Cf. 423 a 12 sqq., b 27 sqq., 435 a 21—24, *De Gen. An.* II. 1, 734 b 29 οὐδὲ πόδα οὐδὲ χεῖρα [int. φήσμεν ἂν ποιῆσαι τὸ πῦρ μόνον]. τὸν αὐτὸν δὲ τρόπον οὐδὲ σάρκα· καὶ γὰρ ταύτης ἔργον τί ἐστιν. σκληρὰ μὲν οὖν καὶ μαλακὰ καὶ γλίσχρα καὶ κραυρα, καὶ ὅσα ἄλλα πάθη ὑπάρχει τοῖς ἐμφύχοις μορίοις, θερμότης καὶ ψυχρότης ποιήσκειν ἂν, τὸν δὲ λόγον ᾧ ἦδη τὸ μὲν σὰρξ τὸ δ' ὄσπουν, οὐκέτι, ἀλλ' ἡ κίνησις ἡ ἀπὸ τοῦ γεννήσαντος τοῦ ἐντελεχείᾳ ὄντος ὃ ἐστὶ δυνάμει ἡ ἐξ οὗ γίνεται, ὥσπερ καὶ ἐπὶ τῶν γινομένων κατὰ τέχνην, *Μεταφῆ.* 1041 b 17 καὶ ἡ σὰρξ οὐ μόνον πῦρ καὶ γῆ ἢ τὸ θερμὸν καὶ ψυχρὸν, ἀλλὰ καὶ ἑτερόν τι (something further, viz. what in the *De A.* is called λόγος τις: cf. *Μεταφῆ.* 1043 b 7 sqq.). Sense by itself is incapable of cognizing this λόγος. Cf. also *De Part. An.* I. 1, 642 a 22 δῆλον τοῦνυν ὅτι καὶ ἡ σὰρξ τὸν αὐτὸν τρόπον ἐστὶ, καὶ τῶν ἄλλων τῶν τοιούτων μορίων ἕκαστον. Flesh with A., as with Plato, *Tim.* 82 C, is a typical example of a tissue in which the combination of certain elements produces a thing of entirely different qualities from those of its constituents, as in a chemical compound. The qualities of the compound depend upon the proportion in which the constituents are blended and will alter or disappear if this proportion is disturbed. Cf. p. 264 *supra*.

b 16 ἄλλω δὲ ἦτοι...17 ἑκταθῇ. There is no disagreement as to the fact. Intellect, τὸ νοητικόν, must be intended. What we want to know is why, instead of stating this briefly ἄλλω δὲ τῷ νοητικῷ τὸ σαρκὶ εἶναι κρίνει, A. has used the words of the lemma, presenting two alternative hypotheses. I do not think that he is attempting to cover two possible cases, but that he is offering two conceivable views of the relation of intellect to sense. Cf. 417 b 12 τὸ δ' ἐκ δυνάμει ὄντος μανθάνον καὶ λαμβάνον ἐπιστήμην ὑπὸ τοῦ ἐντελεχείᾳ ὄντος καὶ διδασκαλικῷ ἦτοι οὐδὲ πάσχειν φατέον, ἡ δύο τρόπους εἶναι ἀλλοιώσεως. Which-ever view we take, whether that intellect is χωριστός (int. τοῦ αἰσθητικοῦ, which must certainly be supplied with ἄλλω) or whether it stands to sense as the straightened line stands to the bent or broken line, I conceive that he intends the words ἦτοι...ἑκταθῇ to be an elucidation of ἄλλω as applied to the single case of intellect discerning the quiddity of flesh. We may replace ἄλλω by χωριστῷ or we may interpret ἄλλω by the simile of the line: and these two cases correspond roughly to the former alternative b 13 ἄλλω ἢ ἄλλως ἔχοντι, except that A. has now made more explicit what he intended by that alternative and now uses ἄλλω of both. By χωριστῷ must be understood "absolutely separable," as in 429 b 5, 430 a 17, i.e. wholly independent of σωματικῇ ἐνέργεια and therefore of the faculties which involve this: cf. 408 b 29, 413 a 6 sq., b 25 sqq. In *Etih. Nic.* I., c. 13 when A. declines to enquire into the relation between the irrational and rational parts of the soul, τὸ ἀλογον and τὸ λόγον ἔχον, he uses similar language: 1102 a 28 ταῦτα δὲ [int. τὸ ἀλογον and τὸ λόγον ἔχον τῆς ψυχῆς] πότερον διώρισται καθάπερ τὰ τοῦ σώματος μόρια καὶ πᾶν τὸ μεριστόν, ἢ τῷ λόγῳ δύο ἐστὶν ἀχώριστα πεφυκότα καθάπερ ἐν τῇ περιφερείᾳ τὸ κυρτὸν καὶ τὸ κοῖλον, where, however, the metaphor is not the same.

If the line preserves its identity, κεκλασμένη cannot mean "broken in two," but must mean "bent at an angle." Cf. *Phys.* v. 4, 228 b 24, *Meteor.* III. 6,

377 b 21 ὥσπερ ἀπὸ χαλκοῦ λείου κλωμένης [int. τῆς ὄψεως, the visual ray which is reflected], *Probl.* v. 19, 882 b 33 ἐν μὲν οὖν τοῖς ἀνάντεσι τὰ γόνυα κλᾶται εἰς τοῦπιπτον. The verb κάμπτεσθαι, which is often used like κλᾶσθαι of two straight lines forming an angle, can also be used of curves. In *Meteor.* iv. 9 κεκαμμένον is opposed to εὐθύ: 386 a 1 ἡ μὲν οὖν εἰς κυρτότητα ἢ κοιλότητα κινήσεις τοῦ μήκους σωζομένου κάμψις ἐστίν· εἰ γὰρ καὶ εἰς τὸ εὐθύ, εἴη ἂν ἅμα κεκαμμένον καὶ εὐθύ· ὅπερ ἀδύνατον, τὸ εὐθύ κεκάμφθαι. If in the simile curved lines were intended and not rectilinear segments, ἡ κεκαμμένη would have been more appropriate. The precise application of the simile in our text is of less importance than the recognition that it interprets more definitely ἄλλως ἔχοντι above, the simile from the bent and straightened line being most suitable for the expression of real identity in relative difference. Diametrically opposite views have been taken, some maintaining that the straightened line stands for intellect and the bent or broken line for sense; others, e.g. Teichmüller (*Stud. zur Gesch. der Begriffe*, p. 492 sqq.), as confidently maintaining the opposite, that the bent or broken line stands for intellect and the straight line for direct perception of particulars by sense. I see no reason for departing from the former view, which is that of the Greek commentators: their assumption that ὁ νοῦς is the subject of κρίνει throughout the discussion does not invalidate their conclusions: Them. 96, 8—30 H., 177, 3—178, 6 Sp., Simpl. 231, 21—34, 232, 13—233, 3, Philop. 526, 3—10, 530, 29—531, 5. An unfortunate use of chiasmus in the main passage renders the evidence of Them. somewhat ambiguous, but that this is what he meant seems clear from the words (96, 24 H., 177, 26 Sp.) συνεξομοιοῦται γὰρ τοῖς πράγμασιν ἂ θεωρεῖ, καὶ ποτὲ μὲν ὥσπερ σύνθετος γίνεται, ὁπότεν τὸ σύνθετον νοῆι, ποτὲ δὲ ὡς ἀπλοῦς, ὅταν τὸ εἶδος ἐκλαμβάνῃ... γίνεται γὰρ ἀνθ' ἐνὸς ὥσπερ διπλοῦς τηνικαῦτα, ὅταν τὴν ὕλην συμπαρασκοπῇ τῇ μορφῇ. That A. regarded a straight line as more truly "one" than the same line when bent or crooked is attested *Metaph.* 1016 a 12 sqq. Simpl. also conceives the bent line to be a departure from the simplicity of the straight line, 231, 18 λογικῇ δὲ γνώσει τὰς συνθέτους καὶ ὅλως τὰς εἰδοποιημένους οὐσίας, καὶ ἑτέρα οὐσία τῶν εἰδῶν ἀντιληπτικῆς καὶ τῇ αὐτῇ μὲν ἀλλ' οἷον καμφθείσῃ καὶ οὕτω τὰ ὀριζόμενα νοοῦσιν. τοὺς γὰρ ὁρὸν ὀρθῶς καὶ ἀκαμπῶς... (24) ἡ δὲ κλάσις δηλοῖ πῃ μέθεξι [int. τῆς τελειότητος]... (27) καὶ ἡ κλασθεῖσα δὲ εὐθεῖα, τοῦτέστιν ἡ καμφθεῖσα, ὡς γωνίαν ποιεῖν, ἀπὸ μὲν τῆς ἐκτεταμένης γέγονεν, ἐκβάσα δὲ τὸ ἀπλοῦν καὶ οἷον εἰς μερισμὸν ὑποβάσας, 232, 39 καὶ γὰρ ἡ κεκλασμένη... τὴν τῶν εἰδοποιημένων σύστοιχον δηλοῖ γνώσιν, ἡ δὲ ἐκταθεῖσα ὡς ὀρθή καὶ ἀκαμπῆς τῆς τῶν ὄρων καὶ τελειότητων γνώσεως εἰληπτὰ σύμβολον. To the same effect on the main issue Philop. 526, 5 ὥσπερ γὰρ ἡ αὐτὴ εὐθεῖα τῷ μὲν ὑποκειμένῳ ἡ αὐτὴ ἐστὶ, τῷ δὲ λόγῳ διάφορος (ἡ γὰρ νῦν εὐθεῖα οὐσα δύναται κλασθῆναι καὶ ἐπικαμπῆς γενέσθαι), οὕτω καὶ ὁ νοῦς ὁ αὐτὸς ὢν τῷ ὑποκειμένῳ ἄλλοτε μὲν εὐθεῖα ἀναλογεῖ, ὅτε καὶ καθ' ἑαυτὸν ἐνεργεῖ καὶ τὰ ἅλα οἶδεν, ἄλλοτε δὲ κεκλασμένη εὐθεῖα ἐπικαμπτόμενος πρὸς τὴν αἴσθησιν καὶ ὀργάνῳ αὐτῇ κεκρημένος, ὅτε καὶ τὰ ἔνυλα οἶδεν. The opposite view was maintained by Zabarella. According to him, the sensitive faculty producing knowledge of particular flesh is compared to the straight line, the same faculty producing the knowledge of its quiddity to the broken line, and he insists that κεκλασμένη = fracta, non inflexa. The straightness of the line indicates that the sense-impression (or its product, the φάντασμα) by a direct and immediate course is presented to intellect, whereas knowledge of the quiddity implies reflexion (ἀνάκλασις). Teichmüller, too, makes the straight line stand for the sensitive faculty and by adducing *Anal. Post.* II. 19, 99 b 36 sqq. endeavours to show that the formation of the universal from isolated impressions of sense may be compared to the bending of a line back upon itself. So also Wallace: "And the



meaning would therefore seem to be that sense and reason stand to one another in cognition as two processes, of which the one goes directly at its object, whereas the other returns upon itself....In sense, in other words, the mind and the object lie apart—a straight line leads from one to the other, but there is no means of returning to the mind; in reason the object of knowledge, the essential idea, is itself rational, so that the mind *returns upon itself*." Trendelenburg called attention to the importance of *ὅταν ἐκταθῇ*, which must be taken closely with *ἔχει*: *Inflexa linea e recta nata posterius aliquid est, cui recta tanquam prius subest. Si inflexam in rectam rursus extenderis, princeps illud et causa restituitur. Ita mens, si notionem, quae rem constituit tanquam lex et causa, intellexerit, hoc, quod subest, sublatis, quae materiae natura notioni acciderunt, in dignitatem restituit suam* (p. 393). M. Rodier, by the entirely different interpretation which, as stated above, he gives of the whole passage, is led to explain the simile as illustrating, not one of two possible conceptions of the relation between intellect and sense, but the relation of the intellect apprehending *τὸ σύνολον τὸ καθόλου* to the intellect apprehending *τὸ τί ἦν εἶναι*. According to him, intellect when it takes account of form and matter conjoined in *τὸ σύνολον τὸ καθόλου* resembles the bent line, when it takes account of form only it resembles the straight line: "L'acte par lequel il saisit une forme pure est, en effet, un et indivisible comme cette forme même et ressemble à la ligne droite. Au contraire, l'acte par lequel il pense une forme avec sa matière logique est déjà une discursion, il implique une pluralité d'éléments unis, quoique distincts, comme la ligne brisée" (II., p. 448 sq.).

b 18. *ἐπὶ τῶν ἐν ἀφαιρέσει ὄντων*, i.e. abstractions, and more especially mathematical objects: cf. first *note* on 403 b 15.

b 18. *τὸ εὐθύ*. Mathematical objects, though at first sight they might seem pure abstractions, have, in fact, matter as well as form: cf. *Metaφh.* 1036 b 35 *ἔσται γὰρ ὕλη ἐνίων καὶ μὴ αἰσθητῶν*, i.e. a logical or intelligible, not sensible, matter, *ὕλη λογική, νοητή*, 1036 a 9 *ὕλη δ' ἡ μὲν αἰσθητή ἐστιν ἡ δὲ νοητή...νοητή δὲ ἡ ἐν τοῖς αἰσθητοῖς ὑπάρχουσα μὴ ἢ αἰσθητά, οἷον τὰ μαθηματικά*, viz. continuity, *τὸ συνεχές*, or more precisely, continuity in space, extension. Thus the straight line, *τὸ εὐθύ*, may be analysed into its matter, continuity or length, and its form, tentatively assumed to be duality. Though the geometer's line is length without breadth or thickness, and therefore abstract, yet extension is a sort of geometrical matter which enables the conceptions of mathematics to be after all concrete. *ὡς τὸ σιμόν*, int. *ἐστι*. That is, *τὸ εὐθύ*, like *τὸ σιμόν*, is *σύνθετόν τι*. The inseparable matter in the one case is *τὸ συνεχές* and in the other *ῥίσις*. The form is (here, at least) in the one case duality and in the other *κοιλότης*.

b 19. *μετὰ συνεχούς γάρ*, int. *ἐστι τὸ εὐθύ*. See *Phys.* VI. 1, 231 a 25 *ἡ γραμμὴ μὲν συνεχές*. This is true of the mathematician's line, the abstraction, which still has extension for its matter. Cf. *De Mem.* 1, 450 a 7 *οὐκ ἐνδέχεται νοεῖν οὐδὲν ἄνευ τοῦ συνεχούς*. When, however, the line is realised, any particular actual line is *ἀεὶ μετὰ σώματος*, 403 a 15.

b 20. *ἄλλο*, int. *ἐστὶ τοῦ εὐθέος*. The reading of cod. E, *ἄλλω*, is intelligible. We must then understand *κρίνει* to govern *τὸ τί ἦν εἶναι* here and *τὸ εὐθύ ὡς τὸ σιμόν* above, the subject as before being *τὸ κρίνον*. Torstrick's defence of *ἄλλω* (*Jahrb. f. class. Philol.* 1867, p. 245) turns on the tautology of the sentence with *ἄλλο*, a mere echo of *ἕτερον*: "But its *τί ἦν εἶναι*, if there is a difference between straightness and the straight line, is something distinct." But this objection is met by Zabarella, who anticipated Bonitz in rejecting *ἄλλω* in favour of *ἄλλο*, not on MS. authority, of which he was unaware, but on that of Them., Simpl. and the reason of the case. The clause b 19 *εἰ ἔστιν...τὸ εὐθύ*, he observes,

merely means that the question of this identity of τὸ εὐθύ and τὸ εὐθεῖ εἶναι is reserved for the metaphysician: it is enough for our purpose to assume that they are different, precisely as a similar assumption was made at b 10 *συμβα*.

b 20. *ἔστω γὰρ δυάς*, int. τὸ εὐθεῖ εἶναι. Cf. *Metaφh.* 1043 a 29 δέ δὲ μὴ ἀγνοεῖν ὅτι ἐνίστε λαμβάνει πότερον σημαίνει τὸ ὄνομα τὴν σύνθετον οὐσίαν ἢ τὴν ἐνέργειαν καὶ τὴν μορφήν, οἷον... γραμμὴ πότερον δυάς ἐν μήκει ἢ ὅτι δυάς, 1036 b 12 καὶ ἀνάγουσι [int. τινές] πάντα εἰς τοὺς ἀριθμούς, καὶ γραμμῆς τὸν λόγον τὸν τῶν δύο εἶναι φασιν. καὶ τῶν τὰς ἰδέας λεγόντων οἱ μὲν αὐτογραμμὴν τὴν δυάδα, οἱ δὲ τὸ εἶδος τῆς γραμμῆς. The form of the mathematical line is perhaps, A. concedes to the Pythagoreans and Platonists, the number Two, which represents the line, if One represents the point: cf. 404 b 20, 22. A straight line is determined, the geometer would say, by any two points in it, and hence Euclid's definition, which is a modification of Plato's in *Parm.* 137 E. To Plato and the mathematicians of his day the point travels and becomes Two in the line, just as the line generates the surface and the surface the solid, 409 a 4 sq.

b 20. *ἐτέρω*. That in this connexion there is no difference between *ἐτέρω* and b 13 *ἄλλω* seems clear: cf. *Metaφh.* 1016 b 21 οὐ ταῦτὸ δὲ ἐν πᾶσι τοῖς γένεσι τὸ ἐν. *ἐνθα* μὲν γὰρ *δίεσις*, *ἐνθα* δὲ τὸ φωνῆεν ἢ ἄφωνον· *βάρους* δ' ἕτερον καὶ κινήσεως ἄλλο, *De Sensu* 7, where the hypothesis first expressed 448 b 20 by *ἅμα μὲν*, *ἐτέρω* δὲ τῆς ψυχῆς αἰσθάνεσθαι is afterwards expressed 449 a 5 by *ἄλλω μὲν γλυκεός*, *ἄλλω* δὲ λευκοῦ αἰσθάνεται *μέρει*.

b 21. *ἢ ἐτέρως ἔχοντι*. The subject knows concrete straightness by one faculty, its form, duality, by another, or rather by a different phase of the same faculty: ἢ, "vel potius," introduces the view which A. thinks the more correct. It must be intellect and not sense which grasps, not only the essence, straightness, but also the concrete mathematical line with its *ὕλη νοητή*: cf. the use of *νοεῖν* 431 b 13, 16 (*δύς*). But, if the concrete line is analogous to *σιμόν*, the attitude of intellect in apprehending it will be analogous to that of sensitivity when it apprehends flesh. And, if so, this is a different attitude from that of intellect when it apprehends pure form, whether of physical flesh or mathematical straightness. Cf. *Them.* 96, 30—97, 1 H., 178, 6—21 Sp., especially 96, 34 H., 178, 12 Sp. *ἐπὶ τούτων* δὴ τῶν ἐξ ἀφαιρέσεως ἄμφω ὁ νοῦς *ἔοικε κρίνειν*, λέγω δὲ ἄμφω τὸ τε σύνθετον ἐκ τοῦ ὑποκειμένου καὶ τῆς μορφῆς καὶ αὐτὴν τὴν μορφήν, ἀλλ' οὐχ ὁμοίως ἔχων καὶ τηνικαῦτα, ἀλλὰ καὶ ἐπὶ τούτων ποτὲ μὲν ὡς ἀπλοῦς, ποτὲ δὲ ὥσπερ σύνθετος γινόμενος.

b 21 καὶ ὅλως... 22 τῆς ὕλης. The genitive τῆς ὕλης goes with *χωριστά*, "separable from matter." By τὰ πράγματα are meant the objects, things as they are known, τὰ ἐπιστητά: cf. 430 a 20, *Anal. Post.* II. 19, 100 b 16 sq. (if the last passage be taken in connexion with *Eth. Nic.* 1140 b 31 sqq.). These objects may be either immersed in matter, like τὸ σιμόν, or separable from it in thought, like τὸ εὐθύ (οὐ κατὰ μέγεθος ἀλλὰ κατὰ λόγον *χωριστά*). ὅλως generalises the distinction between the concrete thing and its form or quiddity, a distinction of which A. has already given two particular examples, viz. *σάρξ* and *σαρκί εἶναι*, *εὐθύ* and *εὐθεῖ εἶναι*: *transiri enim a singulis exemplis ad notionem universalem significat part.* ὅλως (Bz. ad *Metaφh.* 990 b 17). Cf. second note on 403 a 7.

b 22. *οὕτω καὶ τὰ περὶ τὸν νοῦν*, int. *χωριστά* τῆς ὕλης *ἐστί*, where τὰ περὶ τὸν νοῦν may be a periphrasis for *νοῦς*. Cf. *Ind. Ar.* 579 a 44 interdum ita usurpatur [int. formula οἱ περὶ τινα] ut ab ipso personae nomine non multum differat. But the idiom is not confined to proper names. Cf. *Them.* 97, 5 H., 178, 27 Sp. ἢ τοῦ νοῦ θεωρία, *Simpl.* 234, 12 αἱ τοῦ νοῦ τούτου θεωρία. *Prisc. Lyd.*, *Metaφh.* in *Theophhr.* Περὶ νοῦ, p. 34, 1 ed. Byw., informs us that Theophrastus agreed with A. in this statement (*ἀμφότεροι ἀποφαίνονται*), of which he offers

three interpretations. Hence the ancient commentators speak of *ὁ αὐλος νοῦς* and *ὁ ἔνυλος νοῦς*. According to the degree to which the object of thought is involved in matter or free from it, so it is with the mind that thinks the object. Three modes of apprehension have been noticed in this chapter, (1) sense, which apprehends the qualities of concrete things, (2) mind when it apprehends the *ἐνυλα εἶδη* and (3) mind when it apprehends the *αὐλα εἶδη*. But (2) and (3) are different attitudes of the same faculty. This sentence contains the conclusion of the whole passage: *νοῦς* in its operations can separate itself to a greater or less degree from matter; to a less degree when it raises the single notion from the sense-image by abstraction; to a greater degree when it thinks that which is common to the species and the specific essence. In both cases it thinks universals, but the latter are higher universals than the former. Cf. Them. 97, 5 H., 178, 27 Sp. *ὡς οὖν ταῦτα [τὸ εὐθὺ or τὸ τρίγωνον as examples of τὰ πράγματα] τῷ λόγῳ χωρίζεσθαι μόνῃ δύναται, καθ' αὐτὰ δὲ οὐκ ἂν ὑποσταίῃ, οὕτω καὶ ὁ νοῦς χωρίζειν αὐτὰ τῷ λόγῳ μόνῃ ἐπιχειρεῖ.*

**429 b 22—430 a 9.** Two problems remain. The first is: if mind is, according to Anaxagoras, unmixed and impassive, how can it think? Thinking is being acted upon, and to act and be acted upon implies some community between agent and patient [§ 9]. Further, how can mind be an object of thought to itself? This might be taken to imply that there is intelligence in all objects of thought, if the object of thought is everywhere one in kind: or else that there is in intellect an alien element which makes it an object of thought, a hypothesis which is contrary to the view that it is simple and unmixed [§ 10]. The answer to the first question is to be found in the consideration that mind is actually nothing until it thinks. Compare the subject to a blank writing-tablet with a capacity of receiving written characters [§ 11]. As to the second problem, that mind can be its own object follows from the consideration (1) that in the case of immaterial things that which thinks and that which is thought are one and the same, while (2) in material things such objects of thought are only potentially present. This solution suggests the enquiry whether mind is always thinking, an enquiry which must be reserved [§ 12].

The first problem is obviously suggested by a passage in the previous exposition, viz. 429 a 13—20, as the second reference to Anaxagoras shows. The second problem also, like the first, appears to be suggested by a previous remark, viz. 429 b 9, where *νοῦς* is said under certain conditions to know itself, which implies that it is *νοητός*. I am therefore not inclined to accept Prof. Bywater's emendation of that line, which would excise all previous reference to *νοῦς* cognizing itself.

**429 b 24.** *ὥσπερ φησὶν Ἀναξαγόρας.* See notes on 405 b 19, 429 a 18 *supra*. As is there explained, there is no evidence to show that Anaxagoras himself used the word *ἀπαθές* of his *νοῦς*, while A. beyond all doubt does use the term, like *ἀπλοῦν* and *καθαρόν*, as a predicate of the Anaxagorean *νοῦς*. If this be granted, it seems hypercritical to bracket 429 b 23 *ἀπαθές* or to substitute *ἀμικτός* for it. *πῶς νοήσει.* The problem was raised 405 b 21 as a difficulty which Anaxagoras had overlooked.

**b 25.** *πάσχειν τι*, as in 429 a 14, where see note.

**b 25.** *ἥ γὰρ τι κοινὸν ἀμφοῖν.* Cf. *De Gen. et Corr.* I., c. 7, especially 323 b 29 *ἀλλ' ἐπεὶ οὐ τὸ τυχὸν πέφυκε πάσχειν καὶ ποιεῖν, ἀλλ' ὅσα ἡ ἐναντία ἐστὶν ἡ ἐναντίων ἔχει, ἀνάγκη καὶ τὸ ποιοῦν καὶ τὸ πάσχειν τῷ γένει μὲν ὁμοιον εἶναι καὶ ταῦτό, τῷ δ' εἶδει ἀνόμοιον καὶ ἐναντίον· πέφυκε γὰρ σῶμα μὲν ὑπὸ σώματος, χυμὸς δ' ὑπὸ χυμοῦ, χρῶμα δ' ὑπὸ χρώματος πάσχειν, ὅλως δὲ τὸ ὁμογενὲς ὑπὸ τοῦ ὁμογενοῦς.*

τούτου δ' αἴτιον ὅτι τάναντία ἐν ταύτῳ γένοι πάντα. ποιεῖ δὲ καὶ πάσχει τάναντία ὑπ' ἀλλήλων. ὥστ' ἀνάγκη πῶς μὲν εἶναι ταῦτα τό τε ποιοῦν καὶ τὸ πάσχον, πῶς δ' ἕτερα καὶ ἀνόμοια ἀλλήλοις. See also *De A.* 416 b 35 sqq., where A. refers to *De Gen. et Corr.* I., c. 7.

b 26. εἰ νοητὸς καὶ αὐτός, int. ὁ νοῦς ἐστὶν ἀπορήσειε ἄν τις.

b 27. ἡ γὰρ τοῖς ἄλλοις νοῦς ὑπάρξει. If νοῦς is νοητός, two alternative hypotheses are conceivable: it is νοητός either (1) καθ' αὐτόν, οὐ κατ' ἄλλο τι or (2) κατ' ἄλλο τι, οὐ καθ' αὐτόν. The first hypothesis, expanded in the clause b 27 εἰ μὴ κατ' ἄλλο...28 εἶδει leads to the conclusion of the lemma, "all νοητά will have νοῦς predicable of them," "all objects of thought will themselves think": cf. Plato, *Parm.* 132 C ἐκ νοημάτων ἕκαστον εἶναι καὶ πάντα νοεῖν. Though A. does not say so, this result is paradoxical. The consequence to which the second hypothesis leads is contained in the clause b 28 ἡ μεμειγμένον...29 τᾷλλα, "νοῦς will have in it an admixture of something, alien to its own nature, which renders it νοητός." The second hypothesis is not directly stated, but is to be inferred from the consequence to which it leads.

b 27. εἰ μὴ κατ' ἄλλο, if it is only by and in itself (in other words, καθὼς νοῦς ἐστὶ) and not through something else that νοῦς is an object of thought. See the second *note* on 406 a 4. If in the act of thought the object is always mind itself, we must suppose other things to have an admixture of mind in them in order to be thought.

b 28. ἐν δέ τι τὸ νοητὸν εἶδει. We must further assume that the object of thought is always one in kind or specifically the same. The content of thought is homogeneous. The attribute "thinkable," νοητός, must bear one and the same sense, wherever applied: it must not be an ambiguous term. If, then, on this first hypothesis some νοητὸν is νοῦς *quā* νοητόν, this must be equally true of all νοητά. In fact, on this view, whatever its object, it is itself that mind thinks and so there is κοινόν τι ἀμφοῖν. The two problems are really more closely related than at first sight would appear.

b 28 ἡ μεμειγμένον...29 ὥσπερ τᾷλλα. If it is not *per se* that mind is an object of thought, it must be in virtue of something else, κατ' ἄλλο τι. Thus we pass on to the second hypothesis which, as it is not stated, has to be supplied, viz. that νοῦς requires to render it νοητός something else in it other than itself. If something other than mind is the object of mind, the other something must always be in mind for that purpose. In that case this something else, which makes mind νοητόν, must be regarded as a foreign admixture, and thus the condition laid down by Anaxagoras, and accepted by A., that mind is ἀμυγής, is violated. In this connexion it is interesting to notice a remark made by A. in his polemic against the Platonic ideas *Metaφh.* 991 a 14 sqq., 1079 b 18 sqq. that, if the ideas existed in the participant particulars, they might be considered causes of their being: οὕτω μὲν γὰρ [int. ἐνυπάρχοντά γε τοῖς μετέχουσιν] ὥσως αἷτια δόξειεν ἂν εἶναι ὡς τὸ λευκὸν μεμειγμένον τῷ λευκῷ. And this view A. proceeds to attribute to Anaxagoras: 1079 b 20 ἀλλ' οὕτως μὲν ὁ λόγος...δὲν Ἀναξαγόρας μὲν πρότερος [πρώτος 991 a 17]...ἔλεγε διαπορῶν κτέ.

b 29 ἡ τὸ μὲν πάσχειν...31 νοῇ. Here begins the solution of the first problem, as is shown by ῥ: see *note* on 403 b 8. The words κατὰ κοινόν τι must be joined with πάσχειν, not with διήρηται. I take διελεῖν as "to explain": from *Ind. Ar.* 180 a 22 sqq. it appears that the verb often means to distinguish, analyse, discuss, e.g. 402 a 23, 25: in *Metaφh.* 1048 a 27 διαιροῦσιν bears the same meaning as the preceding διωρίσωμεν (a 26). The clause introduced by ὅτι must contain the purport of this previous distinction, i.e. ὅτι="to the effect that": it is not a causal clause. Such an explanation, distinguishing two meanings of πάσχειν,

was given 417 b 2 sqq. Cf. 417 a 18, *note* on ὑπὸ τοῦ ὁμοίου. The community between potential intellect and its objects is that the former is capable of being transformed into the latter. This was stated 429 a 24, so that the πάσχειν of 429 a 14 sqq. satisfies the condition κατὰ κοινόν τι. The relation between τὸ πάσχον and τὸ ποιοῦν is here “a sort of community”: in the analogous passage 417 b 3 sqq. it is described as a carefully qualified similarity, σωτηρία μᾶλλον τοῦ δυνάμει ὄντος ὑπὸ τοῦ ἐντελεχείᾳ ὄντος καὶ ὁμοίου οὕτως ὡς δύναμις ἔχει πρὸς ἐντελέχειαν. We cannot too strongly emphasise the strained meaning put upon all these terms when they are transferred from the mutual action and reaction of things corporeal to the mental sphere: πάσχειν is ἐνεργεῖν 417 a 15, b 1 (cf. 431 a 4 sqq.), τὸ πάσχον is ἀπαθές 429 a 15, and the process which is really εἰς αὐτὸ ἐπίδοσις καὶ εἰς ἐντελέχειαν 417 b 6 sq. is not only said to be ἡ ἐπὶ τὰς ἑξῆς μεταβολὴ καὶ τὴν φύσιν 417 b 15 sq., but is even more improperly described as ἀλλοιώσις, κίνησις, πάθος. If intellect were a corporeal thing and τὰ νοητὰ corporeal things acting upon it, the κοινόν τι ἀμφοῖν ὑπάρχον of b 25 would be a common matter or substratum: *De Gen. et Corr.* I. 6, 322 b 18 sq., I. 7, 323 b 29—324 a 14. Cf. Them. 97, 11—14 H., 179, 4—8 Sp.

b 30 δυνάμει...31 ἐντελεχείᾳ οὐδέν, a pure potentiality, actually non-existent and therefore in no actual relation to an actually existing νοητόν. A.’s solution, then, amounts to this: when the mind thinks, we may regard the object of thought as acting upon it. But this is no ordinary case of physical interaction. Agent and patient have this in common, that the latter, the mind, is potentially the former, its objects, and when it actually thinks it becomes identical with them. A. goes on to say that the relation of what it is before thinking to what it is when actually thinking may be illustrated by the relation of the unwritten tablet to the same tablet with writing upon it.

b 31. δ<υνάμει>εἰ δ’ οὕτως. No satisfactory explanation of the vulgate is forthcoming. The simplest expedient, which, so far as I know, has not occurred to anyone, would be to supply after δεῖ δ’ οὕτως the words δυνάμει πῶς εἶναι τὰ νοητὰ τὸν νοῦν from the preceding sentence. But even then there is not much force in δεῖ, as will be seen if we compare, e.g., 429 a 15 and a 18, where the conditions are stated upon which a result necessarily follows. According to the view which has found most favour, we should understand after δεῖ the verb ὑπολαβεῖν or something equivalent. But, in the first place, it is singular that there should be such an important omission, especially as there is nothing in the context to suggest the missing word. A. goes to great lengths in ellipse, but generally the context furnishes a clue. Besides, ὑπολαβεῖν is not enough to supply. Accordingly, Torstrik supplements thus: δεῖ δ’ οὕτως ὑπολαβεῖν (γίγνεσθαι τὸ νοεῖν) ὥσπερ ἐν γραμματεῖᾳ ᾧ μὴ ἐν ὑπάρχει ἐντελεχείᾳ γεγραμμένον (γίνεται τὸ γράφεσθαι). He gets γίγνεσθαι τὸ νοεῖν from 429 a 13 πῶς ποτὲ γίνεται τὸ νοεῖν, which is a long way off. Torstrik’s supplement gives a fair sense, but so much cannot be said for M. Rodier’s apparently more simple explanation. He would understand συμβαίνειν with δεῖ, removing the stop before ὅπερ συμβαίνει, so that the antecedent of ὅπερ is the subject of the infinitive συμβαίνειν understood, and in fact of the whole sentence. Thus we get: “and what takes place in that which concerns the intellect must take place as in a writing-tablet on which there is nothing actually written.” Why “must”? So long as we supply ὑπολαβεῖν, δεῖ is perfectly in place, δεῖ δ’ ὑπολαβεῖν being frequently used by A. to introduce his explanation of a process, his conception how something goes on. But when he is describing a fact, συμβαίνειν is sufficient. Cf. 408 b 20 νῦν δ’ ἴσως ὅπερ ἐπὶ τῶν αἰσθητηρίων συμβαίνει. The intrusion of δεῖ or any verb of necessity would be confusing, though not in the same degree as

the imperfect ἔδει. Moreover, by the position of the words, ὅπερ συμβαίνει ἐπὶ τοῦ νοῦ suggests a distinct clause.

It is surprising, if δεῖ were the genuine reading, that the commentators should all fight shy of it. The lemma of Simplicius certainly contains the word δεῖ, but so frequently in the ancient commentators are lemma and interpretation inconsistent that we are irresistibly led to conclude that the lemmas have been tampered with. Alex. Aphr. mentions the simile in his own *De An.* (84, 24 sqq.) and takes occasion to correct the supposition that it is the tablet itself which answers to νοῦς ὑλικός. On the contrary, he maintains that it is the aptitude of the tablet for receiving written characters, not the tablet itself, which corresponds to the potential intellect. He gives no clue whatever to the reading. Take Themistius, again. In his paraphrase of the passage (97, 19 sqq. H., 179, 16 sqq. Sp.) there are three distinct adaptations of the text. Piece them together and we get the following: ὁ δὲ νοῦς, ὥσπερ εἴρηται, δυνάμει μὲν ἀπαντὰ ἐστὶ τὰ νοητά, ἐντελεχεία δὲ οὐδὲν πρὶν ἂν νοῇ, ἀλλ' ὥσπερ ἐν γραμματεῖ μὴδὲν ἔχοντι γεγραμμένον ἐντελεχεία ὅταν γραφῇ τὰ γράμματα, τελείωσιν ἂν εἰποῖς τοῦ γραμματείου τὰ γεγραμμένα, οὐ πάθος· οὕτω συμβαίνει καὶ ἐπὶ τοῦ νοῦ. Nearly every word of the vulgate is here introduced, except δεῖ. The interpretation of Simplicius (236, 13 sqq.) takes no account of δεῖ and, if anything, suggests δυνάμει. Nor is there any hint of δεῖ in Philoponus, whose brief note is, 533, 25, ἀγράφῳ γὰρ ἔοικε γραμματεῖ, and this is not because he has overlooked the simile, for he dwells at length upon the egregious misinterpretation of Iamblichus, who tried to make out that ἄγραφον = κακόγραφον. Again, Priscianus Lydus, who twice mentions the simile, 26, 26 sqq., 35, 23 sqq., lends no support to the reading δεῖ. See Appendix, *ad finem*. Lastly, Sophonias 125, 37 sqq. gives a paraphrase which betrays the influence of Alexander, the subjects of the chapter being treated in an arbitrary manner and not in the order of the Aristotelian text. Thus, like Alex. Aphr., Sophonias brings the simile into connexion with the τόπος εἰδῶν of 429 a 27. It would seem hardly possible that the text of which this, such as it is, is a paraphrase, can have contained δεῖ, but highly probable that in place of δεῖ it contained δυνάμει. Mr Cornford's emendation δυνάμει for δεῖ (*Proceedings of the Camb. Phil. Soc.* 1906, p. 13) assumes a compendium δν, which, according to Bast, pp. 805 sq., actually occurs in extant MSS. for δύναμις: through itacism this might be confused with δεῖ. Cf. δ', which Diophantus regularly uses for the algebraical δύναμις. The sense is excellent: "but it is all objects potentially in the same manner as in a tablet, which has not been actually written upon, the writing exists potentially. This is exactly the case with the mind."

430 a 1. ὥσπερ ἐν γραμματεῖ...γεγραμμένον, int. δυνάμει ἐστὶ τὰ γράμματα. The writing-tablet here must not be understood to represent the mind. As Alexander points out, it is rather the aptitude of the tablet while yet uninscribed which corresponds to the mind, which is potentially everything, yet previously to thought actually nothing: cf. Alex. Aphr. *De An.* 84, 21 οὐδὲν ἄρα τῶν ὄντων ἐνεργεία ἐστὶν ὁ ὑλικὸς νοῦς, ἀλλὰ πάντα δυνάμει. πρὸ γὰρ τοῦ νοεῖν οὐδὲν ὦν ἐνεργεία, ὅταν νοῇ τι, τὸ νοούμενον γίνεται, εἴ γε τὸ νοεῖν αὐτῷ ἐν τῷ τὸ εἶδος ἔχῃ τὸ νοούμενον. ἐπιτηδεύτης τις ἄρα μόνον ἐστὶν ὁ ὑλικὸς νοῦς πρὸς τὴν τῶν εἰδῶν ὑποδοχὴν εἰκοῦς πινακίδι ἀγράφῳ, μᾶλλον δὲ τῷ τῆς πινακίδος ἀγράφῳ, ἀλλ' οὐ τῇ πινακίδι αὐτῇ. The tablet, Alex. reminds us, is an actually existent thing and, as such, whether written upon or unwritten, is comparable to the living animal to whom the mind belongs. Priscianus Lydus, who makes the tablet stand for potential intellect, is also worth citing: 35, 25 τὸ ἄγραφον γραμματεῖον...ὡς παράδειγμα τοῦ δυνάμει νοῦ προφερόμενον, ἵνα καὶ τὸ ἄγραφον ὡς ἐν νῷ θεωρῶμεν,

ἔχοντι μὲν κατ' οὐσίαν τὰ εἶδη καὶ τέλεια ἔχοντι, ὑπὸ δὲ τοῦ πρώτου νοῦ τελειούμενα καὶ ἐντελεχεία γραφομένη.

a 2. ὅπερ συμβαίνει ἐπὶ τοῦ νοῦ. Until thought is actually operant, the δυνάμει νοητὰ are not ἐντελεχεία νοητά. Mind has δυνάμει the interpretation of impressions received from without by sense (cf. 432 a 4 ἐν τοῖς εἶδεσι τοῖς αἰσθητοῖς τὰ νοητά ἐστι), in so far as it is capable of thinking the universal. The difficulty arises from πάσχειν: in the next chapter we shall hear that there is in νοῦς a part which suffers and a part which is incapable of suffering. καὶ αὐτὸς δὲ, int. ὁ νοῦς. Here A. turns to consider the second problem; that is, in Torstrik's words, to distinguish between τὸ νῶ εἶναι and τὸ νοητῶ εἶναι. The view that νοῦς is νοητὸς follows from the main proposition of *Μεταφρ.* 1072 b 20 ἐαυτὸν δὲ νοεῖ ὁ νοῦς κατὰ μετάληψιν τοῦ νοητοῦ, where A. is describing the divine mind, which is τὸ πρώτον κινεῖν ἀκίνητον. The difficulties attending this conception are subsequently discussed *Μεταφρ.* Λ., c. 9, a chapter which should be carefully compared: cf. 1074 b 21 sqq., 1074 b 33 sq. and 1075 a 3 cited in note *infra* on a 4. That the process of thinking in the human mind and in the divine mind is conceived by A. as analogous seems clear from such passages as 1072 b 18—26, 1075 a 5—10.

a 3. ἐπὶ comes to much the same as a 6 ἐν: cf. *Μεταφρ.* 988 a 12 καθ' ἧς [int. ὕλης] τὰ εἶδη μὲν ἐπὶ τῶν αἰσθητῶν τὸ δ' ἐν ἐν τοῖς εἶδεσι λέγεται. We think a thing either in the concrete, man, triangle, or in the abstract, humanity, triangularity. In the one there is matter of some sort, the object is a σύνολον, though καθόλου, *Μεταφρ.* 1035 b 27 sqq., 1037 a 1 sqq., 1036 b 22 sqq. In the other case there is no matter.

a 3. τῶν ἀνευ ὕλης. Cf. first note on 429 b 12. These are πρώται οὐσίαι, simplices res, quae non habent distincta a substantia accidentia, nec coniunctam cum actu aliquo potentiam contrarii, sed integrae sunt substantiae et ἐνέργειαι (Bonitz *ad Μεταφρ.* Θ., c. 10, p. 410). They are the ἀδιαίρετα of III., c. 6 (cf. *Μεταφρ.* 1075 a 6 ἡ ἀδιαίρετον πᾶν τὸ μὴ ἔχον ὕλην, 1045 b 23 ὅσα δὲ μὴ ἔχει ὕλην, πάντα ἀπλῶς ὅπερ ἐν τι, 1074 a 33 ὅσα ἀριθμῶ πολλά, ὕλην ἔχει), and the process by which they are apprehended is compared to direct contact, i.e. to the lower faculty of sense. Cf. 407 a 10 sqq., *Μεταφρ.* 1051 b 23—25, 1072 b 20 sq. Pariter [int. atque sensus] mens activa, ὁ ποιητικὸς νοῦς, sibi subiectas habet simplices aeternasque substantias, quae nihil sunt aliud nisi id ipsum substantiae et ἐνέργειαι, harumque cognoscit naturam (Bz. p. 410, note). Cf. 430 b 27—31. Ἄνευ ὕλης is virtually an adjective ἀύλων. We often find μετὰ and its complement similarly equivalent to an adjective: cf. τὰ μετὰ παιδείας=τὰ γελοία *Eth. Nic.* 1177 a 4.

a 4. ἡ γὰρ ἐπιστήμη. The statement recurs 430 a 19 sq., 431 a 1. Cf. *Μεταφρ.* 1074 b 38 ἡ ἐπ' ἐνίων ἡ ἐπιστήμη τὸ πρᾶγμα; ἐπὶ μὲν τῶν ποιητικῶν ἀνευ ὕλης ἡ οὐσία καὶ τὸ τί ἦν εἶναι, ἐπὶ δὲ τῶν θεωρητικῶν ὁ λόγος [τὸ πρᾶγμα] καὶ ἡ νόησις. οὐχ ἑτέρου οὖν ὄντος τοῦ νοουμένου καὶ τοῦ νοῦ, ὅσα μὴ ὕλην ἔχει, τὸ αὐτὸ ἐστὶ καὶ ἡ νόησις τῷ νοουμένῳ μία. It should be observed that in that context A. has previously told us that τὸ εἶναι νοήσει is not the same as τὸ εἶναι νοουμένῳ: besides, experience shows that knowledge, sensation, opinion and thought have something else for their primary object, and, when they apprehend themselves, it is only as a subordinate object.

a 5. οὕτως, int. θεωρητικῶς.

a 5 τοῦ δὲ μὴ δὲ νοεῖν...ὁ ἐπισκεπτόν: a parenthetical remark. The question is suggested by the conclusion that mind may have itself for object: and, as Philop. observes, 528, 11, mind is always present to itself, αἰεὶ δὲ πάρεστιν ἑαυτῷ ὁ νοῦς. Why, then, if τὸ νοεῖν and τὸ νοούμενον be always present, should there be any intermission in the process of thinking?

a 6. ἐν δὲ τοῖς ἔχουσιν ὕλην. If from the sum of νοητά we subtract the pure forms or πρῶται οὐσίαι, τὰ ἄνευ ὕλης, to which the clause a 3 sq. relates, what remains? Merely the things which have matter, the really existing concrete particulars in the world, like trees or stones or men. Each of them is a τόδε τι, which can be analysed into form and matter, 412 a 6 sqq. Owing to the presence of matter their forms are ἐνυλα εἶδη (see *note* on 403 a 25, λόγοι ἐνυλοὶ) and, as such, as really existing outside the mind, essentially different from the forms which the mind receives in thinking them, ἕκαστον τῶν νοητῶν. Cf. 432 a 4 sqq. ἐν τοῖς εἶδεσι τοῖς αἰσθητοῖς τὰ νοητά ἐστὶ, τὰ τε ἐν ἀφαιρέσει λεγόμενα, καὶ ὅσα τῶν αἰσθητῶν ἔξεις καὶ πάθη. They are only potential νοητά unless and until the mind by thinking them transforms them from potential into actual νοητά. Cf. Them. 97, 37 H., 180, 13 Sp. οὐδὲ γὰρ ἦν φύσει ταῦτα [τὰ] νοητά, λέγω δὲ τὰ ἐνυλα εἶδη, ἀλλ' ὁ νοῦς αὐτὰ νοητά ποιεῖ τῆς ὕλης ἀποτεμνόμενος, καὶ δυνάμει ἐστὶ νοητά, οὐκ ἐνεργείᾳ. Hence A. infers that material things are not νοῦς, for it is not with potential νοητά but with actual νοητά that νοῦς is identical in the operation of thinking.

a 7. ἐκείνοις μὲν, int. τοῖς ἔχουσιν ὕλην νοητοῖς. ἄνευ γὰρ ὕλης, to be joined with τοιούτων, "to the exclusion of their matter."

a 8. τῶν τοιούτων, int. τῶν ὕλην ἐχόντων. The stone itself is not in the soul, 431 b 29, but, when we think the stone, we receive its form without its matter. ἐκείνῳ δὲ, int. τῷ νῷ, it will have the attribute νοητός: cf. 429 b 28 ἐν δέ τι τὸ νοητὸν εἶδει. The sentence is equivalent to the statement ὁ νοῦς νοητὸς ἔσται.

## CHAPTER V.

In this chapter A. introduces a distinction between two forms of intellect conventionally known as the passive intellect, ὁ παθητικὸς νοῦς, and the active intellect, ὁ ποιητικὸς νοῦς. He does not himself use the latter term and the former is restricted to this chapter, where it occurs but once. I have followed the usual practice of editors in speaking of the two things distinguished by their conventional names, without thereby committing myself to any positive view as to the nature of the distinction. Everywhere else in his writings A. is content with the single term ὁ νοῦς, as if he accepted the essential unity of intellect. I need hardly remind the reader that A. regarded νοῦς as not confined to man: see 414 b 18 sq. As in *Metaph.* Λ., cc. 6—10, when dealing with intellect in higher beings than man and in the deity, A. often makes use of intellect in man for purposes of illustration, so where, as here and in *Eth. Nic.* X., cc. 7, 8, his subject is the human intellect, we may turn for illustration to the chapters in the *Metaphysics*. Indeed, a close study of Λ., c. 7 and c. 9 is almost indispensable to the elucidation of the present chapter. Throughout this chapter, as in the last, I have derived invaluable aid from Zabarella, who in the main follows Alex. Aphr. *De An.* 88, 17—91, 6, *Mantissa* 106, 19 sq.

**430 a 10—25.** The distinction recognised in the whole of nature between matter and the cause which brings it to actuality holds also of the soul. To the intellect which becomes all objects corresponds the intellect which makes all objects, the latter in its operation resembling light, which makes potential colours actual. Mind in this respect is separable, impassive, unmixed, being in its essence activity [§ 1]. Actual knowledge is identical with its object and, although in the individual potential knowledge, that is, the faculty of knowing, precedes actual knowledge, no such priority attaches to it absolutely. The priority of actual knowledge implies a mind in whose thought there is no



intermission. Only when separated by abstraction is this intellect seen in its true nature, which is immortal and eternal. We have no memory of the thought which is eternal, because the causal intellect is impassive. The passive intellect is perishable and without this (causal intellect) does not think.

430 a 10. ἐπεὶ. The apodosis is a 13 ἀνάγκη ὑπάρχειν.

a 10. ὥσπερ ἐν ἀπόσει τῇ φύσει. Το ὥσπερ answers καὶ before ἐν τῇ ψυχῇ, a 13. By φύσις is meant "the physical universe," "external reality," ὁ οὐρανὸς καὶ ἡ φύσις, *Metaph.* 1072 b 14: or, as Zabarella puts it, "totus mundus generationi et interitui obnoxius": *Ind. Ar.* 835 b 50 sqq. The exhaustive analysis of production, whether by nature (γένεσις) or by art (ποίησις), which we find in *Metaph.* Z., cc. 7—9 starts by distinguishing τὸ ἐξ οὗ, matter, τὸ ὑφ' οὗ, the efficient cause or agent and τὸ τί, i.e. ἐνυλὸν εἶδος (1032 a 17 sq., 1033 a 24 sq.). In *Metaph.* A., c. 3 the language is slightly varied, ὁ replacing ἐξ οὗ and εἰς ὁ replacing τί. Both accounts relate to sensible substances, αἰσθητὰ οὐσία. A. holds that an efficient cause is at once necessary and sufficient to account for the transition from matter, or potentiality, to form, or actuality, as is distinctly stated *Metaph.* 1045 a 30 τί οὖν τούτου τὸ αἴτιον τοῦ τὸ δυνάμει ἐν ἐνεργείᾳ εἶναι, παρὰ τὸ ποιῆσαν, ἐν ὅσοις ἐστὶ γένεσις; οὐδὲν γὰρ ἐστὶν αἴτιον ἕτερον τοῦ τὴν δυνάμει σφαίραν ἐνεργείᾳ εἶναι σφαῖραν, ἀλλὰ τοῦτ' ἦν τὸ τί ἦν εἶναι ἐκατέρῳ [int. τῇ ὕλῃ καὶ τῇ μορφῇ or τῇ δυνάμει καὶ τῇ ἐνεργείᾳ], 1045 b 21 sqq. A. has therefore to find an efficient cause by which the transition of νοῦς from potentiality to actuality, which is implied in the foregoing chapter, is effected.

a 10 ἐστὶ τι τὸ μὲν...II ἕτερον δὲ. The form of the sentence resembles 409 a 13 ἔσται τι ἐν αὐτῷ τὸ μὲν κινεῖν τὸ δὲ κινούμενον. So here ὕλη τις and ποιητικόν τι are the two factors to be distinguished, but the contrast is made more effective by τὸ μὲν and ἕτερον δὲ with anticipatory τί. See also 421 a 26 χυμὸς ὁ μὲν...ὁ δὲ. Cf. for the analysis *Metaph.* 1033 b 12 δεήσει γὰρ διαιρετὸν εἶναι αἰεὶ τὸ γινόμενον, καὶ εἶναι τὸ μὲν τόδε τὸ δὲ τόδε, λέγω δ' ὅτι τὸ μὲν ὕλην τὸ δ' εἶδος, *ib.* b 18 sq., 1045 a 34 καὶ αἰεὶ τοῦ λόγου τὸ μὲν ὕλη τὸ δ' ἐνεργείᾳ ἐστὶν. ὕλη ἐκάστω γένει: cf. *Metaph.* 1089 b 27 καίτοι δεῖ γέ τινα εἶναι ὕλην ἐκάστω γένει [each category, cf. 410 a 18]. πλὴν χωριστὴν ἀδύνατον τῶν οὐσιῶν, *ib.* 1032 a 20—22, 1070 b 19 sq., also 1054 a 5, where from a comparison of 1053 b 22 sqq. it appears that colours, sounds, figures etc. are treated as γένη.

a 11. τοῦτο δὲ δ, that is, as Alex. Aphr., *De An.* 88, 19 completes the sentence, τοῦτο δὲ ἐστὶν, ὁ πάντα δυνάμει ἐστὶ τὰ ἐν ἐκείνῳ τῷ γένει. Matter as yet undifferentiated is potentially all the different individual members of a given class, though actually it is none of them.

a 11. ἕτερον δὲ, "and, in the second place, that which is agent in virtue of making all things." In *Metaph.* 1032 a 17 sqq. τὸ ὑφ' οὗ is described as τῶν φύσει τι ὄντων and ἡ κατὰ τὸ εἶδος λεγομένη φύσις ἡ ὁμοειδής· αὕτη δ' ἐν ἅλλῳ. Again, 1032 b 1 εἶδος δὲ λέγω τὸ τί ἦν εἶναι ἐκάστου καὶ τὴν πρώτην οὐσίαν, also 1033 b 7 τὸ τί ἦν εἶναι· τοῦτο γὰρ ἐστὶν ὁ ἐν ἅλλῳ γίνεσθαι ἢ ὑπὸ τέχνης ἢ ὑπὸ φύσεως ἢ δυνάμεως.

a 12. τῷ ποιεῖν πάντα. The exact sense which ποιεῖν bears in this connexion is thus explained *Metaph.* 1033 a 31 τὸ γὰρ τόδε τι ποιεῖν ἐκ τοῦ ὅλως ὑποκειμένου τόδε τι ποιεῖν ἐστίν: cf. 1033 b 2 τοῦτο δὲ οὕτως ὅτι ἐκ τουδί, ὃ ἐστὶ χαλκός, τοδί ποιεῖ, ὃ ἐστὶ σφαῖρα, b 22 ποιεῖ καὶ γεννᾷ ἐκ τοῦδε τοῦνδε· καὶ ὅταν γεννηθῇ, ἔστι τόδε τοῖόνδε. Matter being imperishable and form eternal, there can be no making and no generation, γένεσις ἀπλῇ, of either the one or the other, 1033 a 28 sqq., 1033 b 5 sqq. This is why the term "creative reason" is so misleading.

a 12. οἷον ἡ τέχνη. This illustrative clause is loosely constructed. As τέχνη

here illustrates τὸ αἴτιον, τὸ ποιοῦν, not ἡ ὕλη, τὸ πάσχον, the expression οὕτως ἔχει would have seemed more appropriate than πέπονθεν. But cf. 424 a 14. A. uses this example because, as each art stands related to its proper matter in manufactured things, so stands the agent or efficient cause to the special matter of each genus in the things of nature. The production of health by the physician *Μεταφh.* 1032 b 5—30 and the construction of the brazen ring and sphere, 1033 a 28—b 11, are stock examples. Iron is potentially all manufactured iron implements, i.e. all the members of the genus. The art of iron manufacture in the soul of the maker (cf. 1032 a 32 sq., b 5, b 22 sq.) is an active principle by which out of the iron all the implements are made: for without some agent the material cannot pass from potency into act (*Μεταφh.* 1071 b 29 sq.) and so make the implements (πλὴν ἀπὸ ταυτομάτου, 1032 a 28 sqq., b 23, 1034 a 9 sqq.).

a 13. ἀνάγκη. The construction is, as suggested above, ἐπεὶ, ὥσπερ... φύσει, ἐστὶ τι τὸ μὲν... ἕτερον δέ..., ἀνάγκη καὶ... ὑπάρχειν, "since there is, firstly, matter and, secondly, efficient cause, these differences must be found, not only in external nature, but also in the soul." On this view the clause ὥσπερ... φύσει should properly come in the apodosis after ἀνάγκη. The only alternative is to take these words with ἐστὶ, which leaves ἐπεὶ without a verb and the sentence anacoluthic. The conclusion must be necessary, not probable. The argument does not prove the existence of a passive intellect. We already know that there is a potential or receptive intellect, a capacity of being affected by intelligibles and becoming thus actualised. The receptive intellect is rather the means by which the existence of the active intellect is proved. As Zabarella says, datur intellectus possibilis, qui naturam habet patientem et... potest transire de potentia ad actum. Ergo datur ex necessitate aliquod agens quod ducat intellectum possibilem de potentia ad actum. As in 412 a 6 sqq. we examined the composite substance, οὐσία συνθέτη, ζῶον ἑμψυχον, to find something, namely body, corresponding to substratum or δύναμις and something else, namely soul, corresponding to form or actuality, so here we are told to look in the soul for a counterpart of these fundamental differences found in the natural world. The word ψυχῇ here would be more precisely τῇ διανοητικῇ ψυχῇ.

a 14. καὶ ἔστιν ὁ μὲν τοιοῦτος νοῦς, by hyperbaton for the more natural ἔστιν ὁ μὲν νοῦς τοιοῦτος. The word τοιοῦτος is predicate and stands for both "passive" with ὁ μὲν and "active" with ὁ δέ [int. νοῦς]: "the one intellect is passive, like matter, in that it becomes all objects, the other intellect is active, like the efficient cause, in that it makes all objects." If τοιοῦτος were attribute and not predicate, ἔστιν must mean "there exists" and the sense must be "passive intellect exists in so far as it becomes all objects, active intellect, in so far as it makes all objects." Those who press this interpretation deny that A. ever really taught the existence of two distinct intellects in the sense in which the art which constructs is distinct from the material which it works upon: they contend that A.'s one intellect is sometimes passive, sometimes active, as it is sometimes θεωρητικός, sometimes πρακτικός.

a 14. τῷ πάντα γίνεσθαι. Argyropylos translates: atque quidam est intellectus talis ut omnia fiat, quidam talis ut omnia agat atque efficiat, qui quidem ut habitus est quidam. With the dative of the infinitive so neatly turned in the Latin cf. 408 b 23 τῷ τὴν ψυχὴν τι πεπονθέναι. Zabarella also paraphrases: hic quidem intellectus est talis, i.e. passivus vel habens locum materiae, eo quod potest omnia fieri, alter vero est talis, i.e. activus, eo quod potest omnia facere. Cf. 429 a 18 πάντα νοεῖ, b 5 sq. ὅταν ἕκαστα γένηται. The word πάντα refers strictly to τὰ νοητά, as the simile from light shows. Light makes potential

colours actual colours, νοῦς makes potential νοητά actual νοητά. For πάντα A. substitutes τὰ ὄντα 429 a 24 (as compared with 429 b 30) and again 431 b 21 sqq. The term ὄντα must include material as well as immaterial things. Cf. 430 a 3 ἐπὶ μὲν γὰρ τῶν ἀνευ ὕλης, α 6 ἐν δὲ τοῖς ἔχουσιν ὕλην. It was a dictum of Averroes that A. posited the active intellect because he did not accept the Platonic universals as existing outside the soul. Commenting on this dictum, Zabarella shows that it requires correction, for universals outside the mind, however much they might be actually intelligible in themselves, would not be so in respect of our intellect. In themselves they are actually intelligible and need no intellect to make them so, but not as they are presented to our intellect, for they are presented shrouded in the phantasmata of their effects and of material things: cf. 432 a 4 ἐν τοῖς εἶδεσι τοῖς αἰσθητοῖς τὰ νοητά ἐστί. This is because our intellect is a form, *quia* homo est homo, and because cognition comes by abstraction, for nothing can be offered to the mind for cognition unless it pass through sense and imagination. Hence the active intellect is necessary even for knowing immaterial things. If we could cognise them ἀνευ φαντασμάτων, we should certainly cognise them without its aid: intellect in that case would not be two-sided. But such a mode of cognition is peculiar to intelligences higher than man (such as move the heavenly bodies, 434 b 4—7). Our potential intellect, however, receives everything from the imagination and therefore it is said to become all objects, whether material or immaterial, by cognition, which is merely through abstraction.

a 15. ὡς ἔστι τις. The term ἔστι is brought in to explain πάντα ποιεῖν, correcting or supplementing the comparison with τέχνη, which was used, a 12 sq., to illustrate the efficient cause throughout nature. In various passages ἔστι is practically a synonym of εἶδος (see Bonitz ad *Metaph.* 1070 a 11, who cites *ib.* 1044 b 32 τοῦ μὲν καθ' ἕξιν καὶ κατὰ τὸ εἶδος ὕλη), just as εἶδος is sometimes used (*ib.* 1069 b 34, 1070 b 11) instead of ἔστι for the positive counterpart of στέρησις. This interchange of meaning arises from the fact that both εἶδος in its distinctive sense of "form" and ἔστι in its distinctive sense of "positive quality" or "permanent disposition" are opposed to στέρησις. Cf. 417 b 16 ἐπὶ τὰς ἔξεις καὶ τὴν φύσιν in contradistinction to b 15 ἐπὶ τὰς στερητικὰς διαθέσεις. There is, however, a difficulty, for νοῦς which is ἐν ἔξει, as described 429 b 5—9, is still δυνάμει πᾶς. That which is always actual and never potential can only be described as a ἔστι by a stretch of the term. Hence τις: cf. *De Gen. et Corr.* I. 7, 324 b 17 τὰ δ' εἶδη καὶ τὰ τέλη ἔξεις τινές, ἡ δὲ ὕλη ἢ ὕλη παθητικόν. But in 418 b 19 light is by implication ἔστι, while 418 b 9 it is ἐνέργεια. In *Anal. Post.* II., c. 19 all modes of cognition, sense, knowledge and intellect, are described as ἔξεις and in *Eth. Nic.* VI., e.g. 1139 b 31, the various intellectual faculties are defined as ἔξεις. It is not, however, certain that our text is precisely what the commentators had before them. For Alex. Aphr. cf. *De An.* 88, 23 εἶναι τινα δεῖ καὶ ποιητικὸν νοῦν, ὃς αἰτιος τῆς ἔξεως τῆς τοῦ ὕλικου νοῦ γίνεται: where, however, Alex. may have substituted αἰτιος τῆς ἔξεως for ἔστι τις on his own authority, tacitly correcting A.

a 15. οἷον τὸ φῶς. Cf. 418 b 18, "darkness is the absence from the transparent of the positive quality (ἔστι) above described, so that plainly light is the presence of this quality." The comparison must have been suggested by the well-known passage in *Republic* VI. 508 A sqq., where Plato compares the idea of the good as the cause of being and of knowledge to the sun.

a 16. ποιεῖ τὰ δυνάμει ὄντα χρώματα ἐνεργείᾳ χρώματα. Cf. Alex. Aphr. *De An. Mantissa*, 107, 31 ὡς γὰρ τὸ φῶς αἰτιον γίνεται τοῖς χρώμασιν τοῦ δυνάμει ὁδοῦν ὁρατοῖς ἐνεργείᾳ γίνεσθαι τοιοῦτους, οὕτως καὶ οὗτος ὁ τρίτος νοῦς τὸν δυνάμει

καὶ ὕλικόν νοῦν ἐνεργεία νοῦν ποιεῖ ἔξιν ἐμποιῶν αὐτῷ τὴν νοητικὴν. When it is dark, the colours exist in external things potentially, when it is light they exist in them actually. It is light which causes the transition from potentiality to actuality. So, too, a cause is needed to transform *δυνάμει νοητὰ* into *ἐνεργεία νοητὰ*, and this has now been provided. The introduction of *ἔξισ τις* seems due to the comparison with light.

a 17 καὶ οὗτος ὁ νοῦς...18 ἀμυγῆς. As Zeller remarks (*Aristotle*, II. p. 121, n. 3, Eng. Tr.) *χωριστός* means here not merely "separable," but "actually separate," i.e. "not involved in physical life," and is best explained by *De Gen. An.* II. 3, 736 b 28 οὐθέν γὰρ αὐτοῦ (int. τοῦ νοῦ) τῇ ἐνεργείᾳ κοινωνεῖ σωματικῇ ἐνεργείᾳ. The three predicates *χωριστός*, *ἀπαθής*, *ἀμυγῆς* were applied to *νοῦς* in III., c. 4 before any mention had been made of the distinction between active and passive intellect. Here these predicates are claimed for the active intellect, and the clause *ἀεὶ γὰρ τιμώτερον κτέ.* certainly suggests that the intellect to which they were ascribed in c. 4 is the passive intellect, and that *a fortiori* they belong to the active intellect which, as cause and activity, stands higher in the scale of logical priority. It has been objected that *καὶ οὗτος δὲ ὁ νοῦς* is required if the sense is "this active intellect also" (as well as the passive intellect). But A. may be allowed to say that the attributes in question belong to this intellect without adding either "as well as to the other" or again "and not to the other."

a 18. τῇ οὐσίᾳ ὢν ἐνέργεια. By *ἐνέργεια* must be understood actual thinking, which is *νοῦ ἐνέργεια*: cf. 407 a 20. It is of its very essence to be activity, potentiality is altogether excluded. This characteristic is distinctive of the active, as compared with the receptive, intellect. The former is, in Zabarella's words, "*substantia vere separata per essentiam a materia*," for to such substances alone does it belong that they are identical with their own activity and that they are so of their own essence and not through something else. Nothing material is in its essence its own activity or operation. The passive intellect can also be said to be identical with its own operation, but it is not *ἐνέργεια* "*secundum suam substantiam*," but because it was brought to this perfection and made such by another, its own essence being pure potentiality in relation to all intelligibles. Cf. *Metaph.* 1071 b 17 *ἔτι οὐδ' εἰ ἐνεργήσῃ, ἢ δ' οὐσία αὐτῆς δύναμις· οὐ γὰρ ἔσται κίνησις αἰδίου· ἐνδέχεται γὰρ τὸ δυνάμει ὃν μὴ εἶναι. δεῖ ἄρα εἶναι ἀρχὴν τοιαύτην ἧς ἡ οὐσία ἐνέργεια*, 1074 b 18 *εἴτε νοεῖ, τούτου δ' ἄλλο κύριον (οὐ γὰρ ἔστι τοῦτο ὃ ἔστιν αὐτοῦ ἡ οὐσία νόησις, ἀλλὰ δύναμις), οὐκ ἂν ἡ ἀρίστη οὐσία εἴη· διὰ γὰρ τοῦ νοεῖν τὸ τίμιον αὐτῷ ὑπάρχει*, 1072 b 26 *ἡ γὰρ νοῦ ἐνέργεια ζωή, ἐκείνος δὲ ἡ ἐνέργεια*, said of the deity. I have followed Torstrik, Belger and Biehl in substituting the nominative *ἐνέργεια* with Simplicius (243, 15, 27, 37) for the dative *ἐνεργείᾳ* of all the MSS., which most of the commentators read. Heinze, the latest editor of Themistius, has substituted *ἐνέργεια* (106, 5) for the dative, which the MSS. of Them. give, citing, after Torstrik, 99, 33 H., 183, 28 sq. Sp.; 100, 6 H., 184, 15 Sp. Cf. 100, 10 sq. H., 184, 21 sq. Sp., where Them. appeals to the express testimony of A.'s own words *οὕτω γὰρ μόνως ἂν εἴη, καθά φησιν Ἀρ., ταυτὸν ἦ τε οὐσία αὐτοῦ καὶ ἡ ἐνέργεια*. There are plenty of instances of both forms of the expression: e.g. for the nominative *Metaph.* 1072 a 25 *αἰδίου καὶ οὐσία καὶ ἐνέργεια οὕσα*, 1072 b 27 cited above, 1071 b 20, Alex. Aphr. *De An.* 89, 16 *ἀπαθής δὲ ὢν καὶ μὴ μειγμένους ὕλην τινὶ καὶ ἀφθαρτός ἐστιν, ἐνέργεια ὢν καὶ εἶδος χωρὶς δυνάμεως τε καὶ ὕλης*: for the dative *Metaph.* 1051 b 28, 1071 b 22, 29, 1072 a 5 sq., b 8, 417 a 29, b 13, 431 a 3 *ἐντελεχείᾳ ὄντος*.

a 18. *τιμώτερον τὸ ποιοῦν τοῦ πάσχοντος*. The possible intellect is its own intellection, yet it is not so in its essence, but it is made such by something else, being in its nature pure potentiality. That which makes it such, viz. the

active intellect, must be in essence such, and must be its own intellection in a higher degree than the possible intellect. This is proved in the present clause, the object of which is to establish, not the three attributes χωριστός, ἀπαθής, ἀμειγής, but τῇ οὐσίᾳ ὧν ἐνέργεια, from which they are deduced. In *Metaph.* Θ., c. 9 there is a formal proof that, however good may be the power to do something, the actual exercise of that power is higher and better, 1051 a 4 ὅτι δὲ καὶ βελτίων καὶ τιμιωτέρα τῆς σπουδαίας δυνάμεως ἡ ἐνέργεια, ἐκ τῶνδε δῆλον: and this holds when the act of thinking is compared with the power to think, *Metaph.* 1072 b 20—24, 1074 b 28—30. Cf. *De Gen. An.* II. 1, 732 a 3 βελτίονος δὲ καὶ θεωτέρας τὴν φύσιν οὐσης τῆς αἰτίας τῆς κινούσης πρώτης, ἥ ὁ λόγος ὑπάρχει καὶ τὸ εἶδος τῆς ὕλης, βέλτιον καὶ τὸ κεχωρισθαι τὸ κρείττον τοῦ χειρόνος... a 7 βέλτιον γὰρ καὶ θεώτερον ἢ ἀρχὴ τῆς κινήσεως, ἥ ἀρρὲν ὑπάρχει τοῖς γινομένοις· ὕλη δὲ τὸ ἢ θῆλυ, *Pol.* 1333 a 21 αἰεὶ γὰρ τὸ χειρόν τοῦ βελτιονός ἐστιν ἕνεκεν, *Categ.* 12, 14 b 4 ἔτι παρὰ τὰ εἰρημένα τὸ βέλτιον καὶ τὸ τιμιώτερον πρότερον εἶναι τῇ φύσει δοκεῖ. Τίμιον καὶ θεῖον are often used to denote incomparable intrinsic worth: cf. *Metaph.* 1074 b 20 διὰ γὰρ τοῦ νοεῖν τὸ τίμιον αὐτῷ ὑπάρχει, *Anal. Post.* I. 31, 88 a 5 τὸ δὲ καθόλου τίμιον, ὅτι δηλοῖ τὸ αἴτιον, *De Caelo* I. 2, 269 b 14 ἔστι τι παρὰ τὰ σώματα τὰ δεῦρο καὶ περὶ ἡμᾶς ἕτερον κεχωρισμένον, τοσούτῳ τιμιωτέραν ἔχον τὴν φύσιν ὅσῳ περ ἀφέστηκε τῶν ἐνταῦθα πλείον, *De Mot. An.* 6, 700 b 34. Cf. the sense of πρότερον in, e.g., *Phys.* VIII. 9, 265 a 22 πρότερον δὲ καὶ φύσει καὶ λόγῳ καὶ χρόνῳ τὸ τέλειον μὲν τοῦ ἀτελοῦς, τοῦ φθαρτοῦ δὲ τὸ ἀφθαρτον. The logical priority of τὸ ποιοῦν over τὸ πάσχον, which is here implied, is affirmed for τὸ κινεῖν as compared with τὸ κινούμενον in *Metaph.* 1010 b 37 sq., while, according to 1049 b 27, τὸ δὲ κινεῖν ἐνεργεῖα ἤδη ἐστίν: and herein lies the reason why A. postulates an ἀρχὴ which is always ἐνέργεια, never δύναμις, nor even ἐνεργεῖν τι οὐ ἢ οὐσία δύναμις, *Metaph.* 1071 b 14—20, 1074 b 18—21, alike for motion and for thought. Cf. 1075 b 30—34, *De Part. An.* I. 1, 640 a 24 τὸ ποιῆσαν πρότερον ὑπῆρχεν οὐ μόνον τῷ λόγῳ ἀλλὰ καὶ τῷ χρόνῳ. This language, attributing superiority or logical priority to the cause over matter, is of Platonic origin: cf. *Phaedo* 80 A, *Philebus* 26 E, 27 A τὸ δουλεῖν εἰς γένεσιν αἰτία, 28 C, 30 A, 53 D τὸ μὲν σεμνότερον αἰεὶ πεφυκός, τὸ δ' ἑλλιπὲς ἐκείνου sqq., *Timaeus* 34 B, C.

a 19. ἡ ἀρχή. To suit a 12 *συνεῖρα*, τὸ αἴτιον καὶ ποιητικόν, the term must be taken in a restricted sense as efficient or final cause: cf. *Metaph.* 1025 b 22 τῶν μὲν γὰρ ποιητικῶν ἐν τῷ ποιοῦντι ἡ ἀρχή, ἡ νοῦς ἢ τέχνη.

a 19. τὸ δ' αὐτό. This remark is repeated 431 a 1—3. The doctrine has been implied in 429 b 9, b 27 sqq., 430 a 2 sqq. Knowledge is a function of the intellect which becomes all objects: cf. *Metaph.* 1074 b 38 sqq., as cited in *note* on 430 a 4. The bearing of this sentence upon what precedes is made clearer by a comparison with *Metaph.* Λ., c. 9. In that chapter two difficulties are raised about the divine mind: (1) if its thinking has an external object, its essence will be not thinking, but the power to think, and it will not be itself the highest and best; (2) what, then, does it think? A. first refutes the assumption that the essence of the divine mind is not actual thinking, but the mere power to think. The object of its thought must be the highest and most divine and must be immutable. Nothing satisfies these conditions but itself. Hence the conclusion: 1074 b 33 αὐτὸν ἄρα νοεῖ, εἴπερ ἐστὶ τὸ κράτιστον: it is νόησις νόησεως. This corresponds to the stage reached in our own chapter at 430 a 18 τῇ οὐσίᾳ ὧν ἐνέργεια, for νοῦ ἐνέργεια = νόησις. To this it may be objected that knowledge and other products of thought have objects other than themselves; and this objection is met, precisely as in the present chapter, by the statement that theoretical knowledge is identical with its object, 1074 b 38—1075 a 5.

a 20. τῷ πράγματι, "the thing known," τῷ ἐπιστητῷ: cf. *Metaph.* 1074 b 38

ἡ ἐπ' ἐνίων ἡ ἐπιστήμη τὸ πρᾶγμα. See notes on 429 b 21, 430 a 3. ἡ δὲ κατὰ δύναμιν, int. ἐπιστήμη. Identity with the thing known is verified for actual knowledge, but not for potential knowledge, which is in point of time prior to actual knowledge in the individual and is distinct both from actual knowledge and from the thing known.

a 21. χρόνῳ προτέρα ἐν τῷ ἐνί, int. ἐστὶ τῆς κατ' ἐνέργειαν ἐπιστήμης. As potential knowledge does not precede actual knowledge in other respects, so neither does it precede it in time, since before X actually knows something, someone else knew it. Potentiality may precede actuality in one individual, but this potentiality was preceded by actuality in someone else. The temporal priority of ἐνέργεια over δύναμις generally from this point of view is established *Metaph.* 1049 b 17 sqq. The words ἐν τῷ ἐνί=in one and the same particular man: cf. 412 a 26 ἐπὶ τοῦ αὐτοῦ. If we take the individual, he has a power of thinking and knowing before he actually thinks and knows. Cf. 417 a 21 sqq., especially 417 b 17—19, where the faculty of sense is declared analogous to the ἔξις of ἐπιστήμη. For geometry, the typical science, the case is well put *Metaph.* 1051 a 21—33. How do we learn or discover the truths of geometry? A's reply is (a 21) εὐρίσκεται δὲ καὶ τὰ διαγράμματα ἐνέργεια, and, after illustrating this by one or two examples, he concludes: a 29 ὥστε φανερόν ἐστι τὰ δυνάμει ὄντα εἰς ἐνέργειαν ἀναγόμενα εὐρίσκεται. αἴτιον δ' ἐστὶ νύησις ἡ ἐνέργεια. ὥστ' ἐξ ἐνέργειας ἡ δύναμις· καὶ διὰ τοῦτο ποιοῦντες γινώσκουσιν· ὕστερον γὰρ γενέσκει ἡ ἐνέργεια ἢ κατ' ἀριθμόν. The potential properties of the figure are thus discovered by being transformed to actualities; the reason is that the actuality of these mathematical objects is the thinking them. Hence here also the potentiality is preceded by actuality, and we get knowledge by the active exercise of thought, for it is only in each individual person that the actuality, the exercise of power, is later to arise. I take ἡ ἐνέργεια ἢ κατ' ἀριθμόν to mean the same as ἡ κατ' ἐνέργειαν ἐπιστήμη ἢ ἐν τῷ ἐνί of our text.

a 21. ὅλως δὲ, simpliciter loquendo et non sumendo aliquem singularem hominem (Zabarella). This stands in contrast with ἐν τῷ ἐνί, "in the individual." We might therefore expect that ὅλως would mean ἐν τῷ ὅλῳ, "in the universe at large," as seems to be the case, e.g., *Phys.* VIII. 6, 259 b 3 ταῦτα δὲ καὶ δόξαν παρέχει μὴ ποτ' ἐνδέχεται κίνησιν ἐγγίνεσθαι μὴ οὔσαν ὅλως (at all), διὰ τὸ ἐν τούτοις ὄραν ἡμᾶς τοῦτο συμβαίνει. And so (in part) Philop. and Zeller: Philoponus' words are: 557, 28 ὁλικῶς καὶ ἀπλῶς εἰπεῖν ἐν ὅλῳ τῷ κόσμῳ οὐκ ἔστι πρότερον τὸ δυνάμει τοῦ ἐνέργεια, διότι πάντα ἐξ ἐντελεχείας τινὸς ὄντος προάγεται εἰς ἐνέργειαν διὰ τοῦ δυναμένου προάγειν. Themistius, however, 99, 31 H., 183, 26 Sp., substitutes ἀπλῶς, which, as we learn from Philop. 557, 27, was actually a variant for ὅλως. Bonitz has remarked that in certain passages the meaning of ἀπλῶς is much the same as that of ὅλως, καθ' ὅλον: quoniam si qua notio simpliciter praedicatur, nihil est additum quod eam distinctius definiat et in angustiore ambitu cogat (*Comm. in Metaph.*, p. 414, ad 1052 a 19). Cf. *Metaph.* 1039 b 21 ἡ μὲν οὕτως ἐστὶν οὐσία σὺν τῇ ὕλῃ συνειλημμένος ὁ λόγος, ἡ δὲ ὁ λόγος ὅλως, 1033 b 11 τοῦ δὲ σφάιραν εἶναι ὅλως εἰ ἔστι τινός τι ἔσται, 1033 b 26 sqq.

a 21. οὐ χρόνῳ, int. προτέρα ἐστίν. In the order of thought or being, potential knowledge is not prior to actual. If in the individual man it comes first in the order of development, it does not follow that even this temporal priority belongs to it ὅλως, whether we interpret this word by "absolutely" or "in the whole universe." In *Metaph.* 1049 b 17—1050 a 3, where the temporal priority, from one point of view, of ἐνέργεια over δύναμις is established, the treatment suggests that ὅλως means "if we consider the whole species." There is an active intellect whose energy is not preceded by a state of mere potentiality.

To the divine mind, described *Metaph.* Δ., c. 7 sqq., this antithesis does not apply. All potentiality is there excluded. The energy of this divine mind is not associated with a νοῦς παθητικός, much less with a body: in Aristotelian phrase, ἐνεργεῖ, ἀλλ' οὐ κινεῖται οὐδὲ πάσχει.

a 22. ἀλλ'. A. has been remarking, about the intellect that becomes all objects, that its knowledge is not always in it actually, but first potentially and afterwards actually (and hence it does not always think, 430 a 5). Then he goes on: "But this is not the case with the active intellect, it has not first potential knowledge and afterwards actual knowledge, so that it sometimes thinks and sometimes does not think: it is always actually thinking," sua essentia est sua operatio.

a 22. οὐχ ὅτε μὲν νοεῖ, int. οὗτος ὁ νοῦς. So Alex. Aphr., *De An. Mantissa* 109, 27 sq., 112, 11 (cf. 112, 23—113, 2), Them. 99, 34—36 H., 184, 1—3 Sp. We could hardly supply ὁ νοῦς here, because of the next sentence. Some commentators, who take divergent views, are obviously influenced by dogmatic considerations. Thus Averroes made the potential intellect the subject and Aquinas the speculative intellect, in which active and passive are combined. Both held the immortality of the whole intellect. The effect of the prefixed negative extends over the whole sentence: ὅτε μὲν νοεῖ ὅτε δ' οὐ νοεῖ = οὐκ αἰὲν νοεῖ and describes intermittent thought, the experience of individual men, who sometimes think and sometimes do not think. This, then, is denied of the active intellect and by implication it is affirmed that it thinks uninterruptedly and perpetually, in marked contrast to the promised enquiry 430 a 5 τοῦ δὲ μὴ αἰὲν νοεῖν τὸ αἴτιον ἐπισκεπτόν, where the subject νοῦς, as so far depicted, must be the potential intellect which, as above explained, by acquiring knowledge develops into a habit (ἔξις). There is no need, however, to cut the knot and with Simplicius in ancient, and Torstrik in modern times, omit οὐχ, as did the scribes of two inferior MSS. When Torst. argues that the text of *De A.* has been tampered with on doctrinal grounds, the probabilities in each case must be carefully weighed. Torst. himself ascribes the insertion of οὐχ to Platonising influences: but if the text were altered by the School (which has yet to be proved), it is at least as probable that their first anxiety would be to make Aristotle's utterances as far as possible consistent, or at any rate to avoid introducing such an apparent and glaring contradiction as that between μὴ αἰὲν νοεῖν and οὐχ ὅτε μὲν κτέ.

a 22. χωρισθῆς, "when separated." The masculine participle goes back to οὗτος ὁ νοῦς, active intellect. According to 429 a 11, χωρισθῆς should mean primarily "when separated from the other faculties of soul." Thus the nutritive faculty is found separated from the rest in plants, 415 a 2 sq. But while, according to 414 b 29—415 a 10, the general rule is that the higher faculties imply the presence of the lower, the case of θεωρητικός νοῦς is peculiar. As a matter of fact, it is found apart from the rest, not only in the deity, but also in the spirits of the spheres. But we must not overlook the all-important distinction that the deity and these spirits are, unlike man, wholly immaterial essences: cf. *Metaph.* 1073 a 3—13, a 34—1073 b 1. In the plainest terms A. denies of them μέγεθος, 1073 a 5 μέγεθος οὐδὲν ἔχειν ἐνδέχεται, a 38 ἀνευ μεγέθους, whereas it is still a problem 431 b 17—19 whether human intellect ever is κεχωρισμένον μεγέθους. It has been maintained that in the case of man "separated from the other faculties of soul" comes to much the same thing as "when separated from the body," viz. before birth or after death. But, it may be asked, is this transcendental interpretation necessary? Others would explain χωρισθῆς as "separated by abstraction." No one would ever think twice before

thus interpreting the aorist of the active verb, as in *Metaph.* 1016 b 2, 1036 b 7, 1078 b 31, 1086 b 4, 5: cf. 1036 b 3 ἀφελείν τῇ διανοίᾳ. This view was clearly stated by Zabarella. To begin with, he contends, the participle must mean a separation which took place in past time. Hence χωρισθεῖς is not applicable to God or the whole genus of abstract substances, the intelligences which move the stars: such substances have always been without matter, as they now are. Thus χωριστός, which can, and often does, mean "both separable and actually separate" is the appropriate term for them: or κεχωρισμένος, which is used with ὦν like an adjective 431 b 18 sq. Again, if we mean by χωρισθεῖς a real separation from matter, the term does not suit the active intellect, for it would imply that the latter was first implicate in matter and that afterwards it was separated from matter: cf. *Metaph.* 989 b 4 τῶν γὰρ αὐτῶν μῖξις ἐστὶ καὶ χωρισμός and 989 b 1 ἅμικτα δὲν προϋπάρχειν. If, then, it is not a real separation which is intended, it must be merely a mental separation. Hence A.'s meaning is that, if we mentally separate it from the relation it has to the passive intellect, which in the individual becomes all objects, and if we consider it in itself and no longer as active, it is its true self alone, τοῦθ' ὅπερ ἐστὶ, because it is pure quiddity and there is no distinction between the quiddity and that which has the quiddity. In case our curiosity is not satisfied and we want to know what it is out of relation to the passive intellect and to man, A. lightly touches upon what it is in itself, though well aware that this question belongs to the domain of metaphysics. He puts us off for the present with τῇ οὐσίᾳ ὧν ἐνέργεια and τοῦθ' ὅπερ ἐστὶ. Cf. 431 b 18 μὴ κεχωρισμένον μεγέθους. Plato by the simile of the sea-god Glaucus, *Rep.* 611 A—612 A, intimates his belief that the essential nature of soul is not to be confounded with its manifestations within our experience.

**a 22. μόνον.** It is not quite clear whether this word goes with χωρισθεῖς or with τοῦθ' ὅπερ ἐστὶ, "it is only when separated that it is what it is" or "when separated, it is what it is and nothing else." From the word μόνον it has been inferred that the condition of companionship with other psychical faculties incident to the life of the individual in some measure hampers or obscures the energy of thought.

**a 23. τοῦτο μόνον,** int. τῶν ἐν ἡμῖν. Cf. *Elē. Nic.* 1177 a 15 εἴτε θεῖον ὃν καὶ αὐτὸ εἴτε τῶν ἐν ἡμῖν τὸ θεϊώτατον, b 28 ἢ θεῖον τι ἐν αὐτῷ ὑπάρχει, b 34 τὸ κράτιστον τῶν ἐν αὐτῷ, *Metaph.* 1074 b 15 δοκεῖ μὲν γὰρ εἶναι [int. ὁ νοῦς] τῶν φαινομένων θεϊώτατον. The neuter pronoun is influenced by τοῦθ' ὅπερ ἐστὶ just before. It is best to interpret τοῦτο here in conformity with τοῦτο in the next line (and, in my opinion, ἀνευ τούτου in a 25), i.e. to refer all three to active intellect, or, more precisely, to the real nature or quiddity of active intellect, τοῦθ' ὅπερ ἐστὶ.

**a 23. ἀθάνατον καὶ αἰδῖον.** Some, e.g. Zeller (*Aristotle* II. p. 104, n. 2, Eng. Tr.), hold that eternity is involved in the attribute χωριστός. Cf. 408 b 25 note. The passage of primary importance besides 408 b 18 sqq., viz. *Metaph.* 1070 a 24, is cited in a note on 408 b 19, p. 277. Here we have a clear statement that there is nothing immortal in the human soul except the active intellect. A. grants that there is an immortal element and tells us what it is. Of the two terms αἰδῖον is wider: ἀθάνατον applies strictly only to living beings, death being the privation of life. Cf. Plato, *Rep.* 611 A ἀνάγκη αὐτὸ δεῖ ὃν εἶναι, εἰ δ' αἰεὶ ὃν, ἀθάνατον. The terms are probably not differentiated here, the use of both is for greater emphasis. The attempts to differentiate them are not successful. See Philop. 537, 1—8, 541, 6—10, who maintains that the other faculties of soul are immortal, but only intellect is eternal. Others say that ἀθάνατον refers to future immortality, αἰδῖον to past eternity; or that the active intellect is ἀθάνατον quā



intellect and life, eternal *quâ* substance. Aquinas, understanding the predicates of the whole intellectual soul, makes A. declare it *αἰδιον* merely *a parte post*, which, as Zabarella remarks, however true from the Christian standpoint, would not have appeared so to A. He would never have admitted that anything could be eternal *a parte post* which was not also eternal *a parte ante*. Cf. Theophrastus apud Them. 108, 26 H., 200, 6 Sp. *ἔοικε δ' οὖν ὡς ἀγέννητος, εἴπερ καὶ ἀφθαρτος*.

a 23. οὐ μνημονεύομεν, "we" as individual human beings, who began to be at birth and cease to be at death. In 408 b 27 sq. the individual is said not to remember when the body is destroyed. But here no such condition is attached, and it is arbitrary to force the same meaning out of the two passages. The clause seems to answer, not the preceding sentence, but the previous assertion, a 22, of perpetual, unbroken thinking, "though it is always thinking, yet we do not remember": and this, too, when we do remember many of our former thoughts and can often recall at will what we learned or knew, *De Mem.* 1, 449 b 18—22 *et saepe*. The reference to 430 a 22 suggests that the object of memory which A. omits to state is the eternal thought of the active intellect. But will this explanation suit the reason assigned? An activity of perpetual thinking is certainly impassive in a different way from a *δύναμις*. The latter, however often objects are presented to it, never fails to respond by receiving them and thus passing from potency into act. The former, being always in act, never once does this. For memory two things are requisite, (1) affection, *πάθος*, and (2) time. So far as the active intellect is concerned, there is no affection in the composite substance of the individual, nothing *μνημονευτόν*, because nothing *φανταστόν*. It is true that A. sometimes speaks as if the particular man could on rare occasions become directly conscious, as we should now say, of the eternal life of the divine element within him, *Μεταφῆ.* 1072 b 13—30, from which I cite b 14 *διαγωγὴ δ' ἐστὶν οἷα ἡ ἀρίστη μικρὸν χρόνον ἡμῖν. οὕτως γὰρ αἰεὶ ἐκείνο (ἡμῖν μὲν γὰρ ἀδύνατον) and b 24 εἰ οὖν οὕτως εὖ ἔχει, ὥς ἡμεῖς ποτέ, ὁ θεὸς αἰεὶ, θαυμαστόν· εἰ δὲ μᾶλλον, ἔτι θαυμασιώτερον. ἔχει δὲ ὧδε, 1075 a 5—10, especially a 7 ὥσπερ ὁ ἀνθρώπινος νοῦς, ἡ δ' ὅ γε τῶν συνθέτων, ἔχει ἔν τινι χρόνῳ· οὐ γὰρ ἔχει τὸ εὖ ἐν τῷδὲ ἢ ἐν τῷδί, ἀλλ' ἐν ὅλῳ τινὶ τὸ ἀριστον, ὃν ἄλλο τι· οὕτως δ' ἔχει αὐτὴ αὐτῆς ἡ νόησις τὸν ἅπαντα αἰῶνα. The text of this last important citation is not quite certain. Bonitz bracketed ἡ before ὁ γε τῶν συνθέτων and translated "die menschliche Vernunft, obgleich (γε) das Zusammengesetzte ihr Gegenstand ist." See also *Eth. Nic.* 1177 b 26—1178 a 8, 1178 b 18—32, especially b 26 τοῖς δ' ἀνθρώποις, ἐφ' ὅσον ὁμοιωμά τι τῆς τοιαύτης ἐνεργείας ὑπάρχει, and, when he urges us to make ourselves immortal as far as we can, *Eth. Nic.* 1177 b 33, he explains his meaning by adding "and spare no pains to live in the exercise of the highest of our faculties." But this rapture of thought is rare, even for the most highly favoured of men: of them through the greater part of their lives and of the great majority of mankind at all times both the statement that we do not remember and the reason, the impassivity of the active intellect, hold good.*

There is another way of explaining the passage psychologically, which was adopted by Plutarch of Athens (apud Philop. 541, 20 sqq.), viz. to understand it as referring to the lapses of memory, the errors, mistakes and forgetfulness which, frequent at all periods of life, grow more frequent in old age. But the reason assigned, viz. the impassivity of intellect, seems quite unsuitable to the effect. Stress must on this view be laid, not on the impassivity of the active, but on the corruptibility of the passive intellect. Moreover, other causes, mainly of a corporeal nature, are assigned by A. himself in his treatise on

memory, *De Mem.* 1, 450 a 30—b 11, 2, 453 a 14—b 7, and nothing is there said of this cause. Again, instead of the general enquiry why we do not remember we should have expected the question why we forget, or rather why we forget this or that particular thing. Cf. *Metaph.* 1047 a 1 ἡ γὰρ λήθη ἢ πάθει τινὶ ἢ χρόνῳ· οὐ γὰρ δὴ τοῦ γε πράγματος φθαρέντος, ἀεὶ γὰρ ἔστιν. Theophrastus attributed not only forgetfulness, but error (cf. 427 a 29 sqq.) and falsehood to the union in man of the two intellects: *apud* Them. 108, 27 sq. H., 200, 8—10 Sp. It is not, however, certain that the allusion is to our lemma.

Lastly, there is the transcendental view, which most commentators have adopted. It is presented in two forms: (1) Why after death do we not remember our past lives, if the intellect is immortal and survives the death of the man? (2) Why in this present life do we not remember what the intellect knew in previous states of existence, since intellect is eternal and existed before our birth? The advocates of (1) make A. say "Why do we men not remember?" But after death the man has ceased to exist. Besides, it is vain to search for the cause when we are ignorant of the fact or effect. We cannot know now that we do not remember after death, but the words of the text presuppose a known fact. Those who support (1) as against (2) claim that the terms of A.'s solution favour their view, since "perishable" and "impassive" are correct only if the remembrance is assumed to take place in a future life. If the remembrance were in this life of a past incarnation, ἀγένητος, γενητός ought to have replaced ἀπαθής, φθαρός. A. ought to have said "We do not remember our former lives because the active intellect is ἀγένητον, not subject to birth, and the passive intellect is born at the same time as the man, and has had no pre-existence." On the other hand, if it be assumed that A. is alluding to Plato, an assumption which cannot be proved, then this would make in favour of (2), for it was knowledge in this present life which Plato explained by recollection from a past existence. It is also a point in favour of (2) that there is no need to qualify the remembered past by the words "before birth," while, if the reference were to a future life, we should have expected "after death" or something equivalent to τοῦτου φθειρομένου 408 b 27. Neither view, then, can be stated without presenting grave inconsistencies. Though the second view appears the less inconsistent of the two, in so far as it assigns the memory in question to this life, it is not really more tenable. We cannot remember what we have not experienced and, if individual existence began at birth, so also did individual experience. In this treatise A. takes no account of soul outside the animate body, but always considers it as in the body. See, e.g., 407 b 13—26, 412 b 4—413 a 10, 414 a 4—28, 415 a 25—b 7.

a 24. ὁ δὲ παθητικὸς νοῦς φθαρός. The expression occurs nowhere else, but the conception is familiar: see, e.g., 429 a 13—18. φθαρός is not the proper antithesis to ἀπαθής, unless that word be taken to imply "indestructible," ἀφθαρτον. But see *note* on 408 b 25, αὐτὸ δὲ ἀπαθές. As, however, αἰδιον has just preceded, I think the argument is not fully stated. I should expect it to run thus: *ὅτι τοῦτο μὲν ἀπαθές, παθητικὸν δὲ ἄλλο*, "but what is capable of suffering is something else, not this." This completes the statement of the reason why we do not remember the thoughts of the eternal intellect. If so, φθαρός is a further step: the intellect which can suffer, which becomes all objects, is not immortal and eternal, but perishable. We may recall the formal proof given *Metaph.* 1050 b 6—18 of the proposition οὐδὲν δυνάμει αἰδιον: things perishable are just those *ὅν ἡ οὐσία ὕλη καὶ δύναμις*, 1050 b 27: it was *ὁ δυνάμει νοῦς* with which A. started in c. 4. Here, however, the greatest care is needed. Intellect is a form, and all forms are uncreated, even if they are not all

separable. The passive intellect belongs to the class of objects which are and are not without becoming or perishing. It is, therefore, only *per accidens* generable or perishable when the particular thing in which it dwells comes to be or is destroyed. Cf. *Metaph.* 1043 b 14—16, 1044 b 21 sqq. In the text no grounds are given for the conclusion *φθαρτός*. We may conjecture as follows. The man cannot think without mental images, which imply sense and imagination, and these powers of the soul are conditioned by the body. The dissolution of the compound substance, the man himself, puts an end to the processes of sensation and imagination, and to the thinking of the man, in so far as mental images are necessary thereto. Again, if the passive intellect perishes, it also had a beginning, its existence in the man is finite, like the existence of the man himself. The single immortal and eternal element in us is obviously not subject to the same conditions.

a 25. καὶ ἄνευ τούτου οὐδὲν νοεῖ. The advocates of the transcendental interpretation of οὐ μνημονεύομεν consider that this is part of the reason why memory does not extend from one incarnation to another. Accordingly Simplicius (248, 6) makes ὁ ἀπαθὴς νοῦς the subject of νοεῖ and ἄνευ τούτου = ἄνευ τοῦ παθητικοῦ νοῦ. As to the latter point Bonitz agrees, *Ind. Ar.* 491 a 57 sq. Trend. objected that, upon this interpretation, id quod per nomina licere crederes, tolleretur ἀπάθεια et ipsa agentis intellectus libertas in quamdam patientis servitutem assereretur. Simplicius foresaw this objection and met it by restricting νοεῖν to things which can be remembered: 248, 4 ὁ δὲ παθητικὸς φθαρτὸς ὡς παθητικὸς, καὶ ὡς εἰς τὸ μόνιμον συναιρούμενος [merged in immobility], ἄνευ δὲ τοῦ παθητικοῦ ὡς παθητικοῦ καὶ προϊόντος μέχρι τῶν σωματοειδῶν ζῶων οὐδὲν νοεῖ ὁ ἀπαθὴς τῶν ὅσα δηλαδὴ μνημονεύτα, περὶ ὧν ὁ λόγος· ἅπερ, ὡς ἐν ἄλλοις αὐτὸς ἡμᾶς διδάσκει, πάντως ἐστὶ φανταστά. διὸ ἐν τῇ περὶ τῶν μνημονευτῶν νοήσει δεόμεθα πάντως τοῦ μέχρι φαντασίας προϊόντος λόγου, καὶ ἄνευ τούτου οὐδὲ ὁ ἀπαθὴς τῶν μνημονευτῶν τι νοήσει. Without some such restriction the statement is curiously infelicitous as applied to the eternal something whose essence is activity. Zabarella also makes the active intellect the subject of νοεῖ and ἄνευ τούτου = without the passive intellect. The active intellect, according to him, is said to think in two ways, (1) secundum se, in which sense, though the active intellect is said to think, the man is not said to think and (2) non formaliter, sed effective, quia efficit in homine intellectionem, et tunc homo dicitur intelligens, non ipse intellectus agens, qui producit in homine intellectionem potius ut intelligibilis quam ut intellectus, sicut sol non est videns, sed efficit in oculo visionem. Thus he distinguishes human thought in the individual, for which the passive intellect is necessary, from the eternal thought of the active intellect, and restricts νοεῖ to the former. Zeller (*Aristotle* II., p. 101, n. 3, Eng. Tr.) offers two explanations. In one of them, taking the active intellect as the subject of νοεῖ and τούτου to mean the passive intellect, he restricts νοεῖ to the thought of the individual, so that there would be no inconsistency with a 22 οὐχ ὅτε μὲν νοεῖ ὅτε δ' οὐ νοεῖ, which does not apply to the thought of the individual. His second explanation would secure this restriction to the thought of the individual by making ὁ νοῶν or ἡ ψυχὴ the subject of νοεῖ, i.e. "no thought is possible." In my opinion the Greek naturally suggests the view that ὁ παθητικὸς νοῦς is the subject not only of φθαρτός, but also of οὐδὲν νοεῖ. For, if we suppose that νοεῖ is one more instance of the omission of the subject and that τὸ νοοῦν, then to be supplied, means the composite substance of the individual thinker, it by no means follows that ἄνευ τούτου must mean the passive intellect. If the active intellect had not been required to complete the theory of how thinking comes about (429 a 13), this chapter would never have been written,

for nowhere else is a distinction drawn between two intellects. In order, then, that the individual man may think, it is indispensable to assume both forms of intellect, that which becomes all objects and that which makes all objects (cf. Alex. Aphr. *De An. Mantissa* 112, 20 sq.), and *ἀνευ τούτου* may be understood of either. If, however, as I believe, *φθαρτός* is opposed, not to *ἀπαθείς*, but to *δίδιον*, and if A. is therefore contrasting the one form of intellect with the other, the attribute of corruptibility would naturally be followed by the assertion of the dependence of the conditioned upon that which conditions it. I may add that, if it were certain that *οὐθὲν νοεῖ*, like 408 b 28 *οὔτε μνημονεύει*, were quasi-impersonal, I should certainly advocate a change of punctuation and put a full stop after *φθαρτός*, the new sentence thus summing up the whole chapter: "and without the active intellect no thinking is possible."

## CHAPTER VI.

This chapter treats of various topics, but all are more or less closely connected with the main subject, the apprehension of single or isolated concepts. If we take the first sentence and the last together, we may infer that the main subject of the chapter is intuitive thought and its superiority to discursive thinking, in so far as it deals with the indivisibles, in the apprehension of which falsehood is impossible. Between these two sentences we find (1) a brief discussion of judgment, the process by which the mind puts together single notions and forms a new unity, viz. the judgment expressed in the proposition, whether it do so by combining or by separating. This section ends with the important statement (b 5) that in all such cases it is the intellect which makes the unity. (2) We have a sketch of the way in which three kinds of single notions are thought and known; firstly, the quantitative notions, like length and magnitude, which belong to mathematics; secondly, the infimae species of the physical world and, thirdly, the point. This leads to (3) a casual mention of the possibility of a self-thinking thought. Why these topics are introduced and treated in this order is not stated. A. does not set out to prove that the mind thinks indivisibles, but rather, taking that for granted, dwells on the various ways in which this comes about. He is dealing throughout with units or unities, *ἀδιαίρετον* being simply a more precise term for the vague and ambiguous *ἓν*: and the obscurity of some parts of the chapter stands in marked contrast to the clear account of the subject given elsewhere. Now of unity there are various grades, identity, similarity, equality (cf. *Metaph.* 1054 a 29 sqq.): in the fullest sense unity attaches pre-eminently to substances. In general, those things are eminently one of which the thought which thinks the quiddity is indivisible and can effect no separation either in time or in space or in notion, more particularly if they are substances, *Metaph.* 1016 b 1 sqq. Material things, *τὸ συνεχές*, *τὸ ὅλον*, are unities of the lowest order, the test being that when such a thing moves, all of it moves together. Then again, the universal, whether genus or infima species, is one, and so is the particular: but these have unity of a higher order, the test of which is that they are thought as one, which is the same thing as saying that the thought which thinks them is one. But these are only instances of the application of the predicate of unity. What is it which constitutes their common nature? A. is careful to deny the proposition, which he ascribes to the Pythagoreans and Plato, that unity is a separately existing entity in the universe, by partaking in which other things become one.

There is no objective *έν*, there is only *έν τι*, i.e. something which exists as the universal predicate. How, then, can oneness be defined? Not in the ordinary way *per genus et differentiam*, for unity, like Being, is too wide to come under any of the categories, so universal a predicate that it can be applied to all things, adding nothing to their content; just as *άνθρωπος*=*άνθρωπος έν*, so also *άνθρωπος εἰς* is no more than *άνθρωπος*, *Μετὰ φ.* 1003 b 26 sq. What do we convey by this universal predicate? Just this, that oneness is indivisibleness: *Μετὰ φ.* 1052 b 16 *τὸ ένι εἶναι τὸ ἀδιαρέτω ἐστίν εἶναι ὕπερ τῶδε ὄντι καὶ ἰδίᾳ χωριστῶ ἢ τόπω ἢ εἰδῇ ἢ διανοίᾳ, ἢ καὶ τὸ ὅλῳ καὶ ἀδιαρέτω, μάλιστα δὲ τὸ μέτρῳ εἶναι πρῶτῳ ἐκάστου γένους καὶ κυριώτατα τοῦ ποσοῦ· έντεῦθεν γάρ ἐπὶ τὰλλα ἐλήλυθεν.* Moreover, when we think of a thing as one, we do so without reference to any division into parts of which it may be capable, or any distinction or difference which presents itself when it is compared with another thing, and we think of it moreover as absolutely separate and shut off from everything else. Thus oneness is privation of relation. When a fleet is thought of as one, the differences between the various ships composing it are ignored. We should cease to think of it as one, if we turned our attention to the number of individual ships composing it. There are many different colours and various distinctions between the shades, but all differences and distinctions are ignored when we think of colour as one: and so with triangle, circle, geranium, lion or any other notional unity.

What, then, are the *ἀδιαίρετα* of our text? They are *νοητὰ* and immaterial, without *ὕλη*, 430 b 31. They are simple, for they take their place as elements of more complex *νοητὰ* in the judgment and in other *σύνθετα*. They are not, however, absolutely unanalysable, if quiddities are included (430 b 28), for the definition which has the quiddity for its content, like every *λόγος* (*Μετὰ φ.* 1016 a 34 sq., 1034 b 20), consists of parts, and the discursive intellect can separate these parts, e.g. *ζῶον* from *δίπουν* when it analyses the definition of man. Apparently also from 430 b 7—14 it follows that notions of magnitude can be divided and recombined. Rather we may say that, as A. holds about mathematical objects (431 b 15 sq.) that they are not separate from sensibles, but we think them as if they were separate from sensibles, so he holds about forms or quiddities and the notions of length and other magnitudes that they are not always indivisible, but that the mind thinks them as if they were indivisible.

**430 a 26—b 6.** Where thought is dealing with single, indivisible notions, falsehood or error is impossible. Truth and falsehood are possible only when these irreducible units of thought are put together. As Empedocles supposed the limbs of animals to have been first separately evolved before they united to form animal bodies, so in the realm of thought separate notions are first apprehended and are afterwards united together in a judgment [§ 1]. If thought is dealing with the past or the future, time is an additional element in the combination. False judgment is due to a confusion, as of not-white with white. Or we may use the term disjunction instead of conjunction to describe the relation between concepts in every judgment. Time in any case will affect the truth or falsehood of the judgment. To unite the isolated concepts in a judgment is the work of the intellect [§ 2].

On this passage, the best introduction to which will be found in *Μετὰ φ.* Γ., c. 7, E., c. 4, Θ., c. 10, cf. Vahlen, *Aristotelische Aufsätze* I. and Maier, *Syllogistik des Aristoteles* I., pp. 24—35.

**430 a 26.** *τῶν ἀδιαίρετων*, i.e. single concepts: *ἀδιαίρετον*=indivuum, like *έν*, *ἀπλοῦν*, *ἀμερές*, *ἄτομον*. Cf. 430 a 3 *τῶν άνευ ὕλης*, *note*. Such unities are, if indivisible, exempt from matter. So long as a *νοητὸν* is *διαπερόν τι*, logical

analysis can always go on separating, τὸ μὲν τόδε τὸ δὲ τόδε, so much form, so much matter: if no longer sensible matter, then logical or intelligible matter. See *Metaph.* 1033 b 12—19, *Z.*, cc. 10, 11 and 1045 a 33—35. In the words of Bonitz, as long as you can distinguish substance from accidents, you have not reached primary indivisible essence: Iam duo distinguenda sunt rerum genera, compositarum rerum alterum, alterum simplicium. Compositae autem quas dicit non sunt intelligendae eae, quae ex pluribus elementis coaluerunt, sed eae potius, in quibus cum substantia coniungitur accidens aliquod, veluti homo albus, homo sedens, diagonalis irrationalis ac similia (Bonitz ad *Metaph.* Θ., c. 10, p. 409).

a 26. περὶ δ. In such cases we either do, or we do not, grasp the object in thought. The function of νοῦς is intuitive. Truth and falsehood are not in the things thought, but in the mind, *Metaph.* 1027 b 25—27. Truth and falsehood are due to an affection of the mind, διανοίας τι πάθος, 1028 a 1. But when we think notions οὐχ ἅμα ἀλλὰ χωρὶς, in isolation, when the object of thought is the simple essence or the quiddity, even the mind itself does not introduce truth or falsehood, 1027 b 27 περὶ δὲ τὰ ἀπλᾶ καὶ τὰ τί ἐστίν (the ἀδιαίρετα of our text) οὐδ' ἐν τῇ διανοίᾳ [int. τὸ ψεῦδος καὶ τὸ ἀληθές]. Cf. *Metaph.* 1051 b 17—33. What, A. asks, is “being” and “not-being,” as truth and falsehood, with regard to these uncompounded essences, περὶ τὰ ἀσύνθετα? Where the object is compounded, where, as with white wood, incommensurable diagonal, we can distinguish predicate from subject, accident from substance, there “to be” means the conjunction of accident with substance in rerum natura, and truth means the corresponding conjunction of predicate with subject in the mind, while “not-being” and falsehood can be similarly explained as disjunction in rerum natura and in the mind respectively. But in the case we are considering no such analysis is possible. Both “being” and truth must admit of a different explanation. Here truth is simple apprehension, and not to apprehend is ignorance, *Metaph.* 1051 b 23 ἀλλ' ἔστι τὸ μὲν ἀληθές θιγεῖν καὶ φάναι...τὸ δ' ἀγνοεῖν μὴ θιγγάνειν. We cannot be deceived, except *per accidens*, about the quiddity or the simple essences, which are always in activity and never potential. Thus when we have to do with essential “being” and actuality, mistake is impossible: we either have or have not the notion, *Metaph.* 1051 b 31 περὶ ταῦτα οὐκ ἔστιν ἀπατηθῆναι ἀλλ' ἢ νοεῖν ἢ μή.

a 27. ἐν οἷς δὲ. Cf. *De Interpr.* I, 16 a 9, where after a reference to *De A.*, that is, to the present passage, the writer continues ἔστι δ', ὥσπερ ἐν τῇ ψυχῇ ὅτε μὲν νόημα ἄνευ τοῦ ἀληθεύειν ἢ ψεύδεσθαι, ὅτε δὲ ἤδη ᾧ ἀνάγκη τούτων ὑπάρχειν θάτερον, οὕτω καὶ ἐν τῇ φωνῇ· περὶ γὰρ σύνθεσιν καὶ διαίρεσιν ἐστὶ τὸ ψεῦδος καὶ τὸ ἀληθές. τὰ μὲν οὖν ὀνόματα αὐτὰ καὶ τὰ ῥήματα ἔοικε τῷ ἄνευ συνθέσεως καὶ διαίρεσεως νόηματι, οἷον τὸ ἄνθρωπος ἢ τὸ λευκόν, ὅταν μὴ προστεθῇ τι· οὔτε γὰρ ψεῦδος οὔτε ἀληθές παρ', *Metaph.* 1051 b 1 τὸ δὲ κυριώτατα δὲν ἀληθές ἢ ψεῦδος, τοῦτο δ' ἐπὶ τῶν πραγμάτων ἐστὶ τῷ συγκεῖσθαι ἢ διηρησθαι, ὥστ' ἀληθεύει μὲν ὁ τὸ διηρημένον οἰόμενος διηρησθαι καὶ τὸ συγκείμενον συγκεῖσθαι, ἔψευσται δὲ ὁ ἐναντίας ἔχων ἢ τὰ πράγματα.

a 28. ὥσπερ ἐν ὄντων. This is practically equivalent to ἡνωμένων, “being unified.” Them. (109, 8 H., 201, 4 Sp.) observes συντίθησι δὲ οὐχ ὥσπερ σωρόν, ἀλλ' ὥστε ἐν αὐτοῖς τὰ πολλὰ ποιῆσαι καὶ περιγαγεῖν εἰς μίαν νόησιν τὸ πλῆθος τῶν ἀπλῶν σημασινομένων. New wholes or unities are formed out of the old by the mind. For ἐν indeclinable, when used predicatively, cf. *Metaph.* 1015 b 36, 1016 a 12 sq., a 22, a 25 sq.

a 28 καθάπερ Ἐμπεδοκλῆς...29 ἰβλάστησαν. This line is quoted again by A., with the omission of ἡ, in *De Caelo* III. 2, 300 b 30 sq. Simplicius in his com-

mentary on the *De Caelo* 587, 1 sq. quotes the two following lines of the poem (Emp. frag. 57 D, 232—234 K):

γυμνοὶ δ' ἐπλάζοντο βραχίονες εὐνίδες ὤμων,  
ὄμματά τ' οἷ(α) ἐπλανᾶτο πενητεύοντα μετώπων.

This Empedoclean notion of disconnected limbs serves to illustrate isolated concepts and single terms. As the former were joined together to form animal bodies, so the latter can be combined in the unity of the judgment or proposition.

a 30. ἔπειτα συντίθεσθαι τῇ φιλιᾷ. This is a summary of Empedocles' lines, frag. 20, 2 sq. D, 336 sq. K (cf. Simpl. in *Phys.* 1124, 11 sqq.):

ἄλλοτε μὲν Φιλότῃτι συνερχόμεν' εἰς ἐν ἅπαντα  
γυῖα, τὰ σῶμα λέλογχε, βίου θαλέθοντος ἐν ἀκμῇ.

a 30. οὕτω καὶ. Here A. returns from the simile to the psychical fact to be illustrated, restating what he had affirmed above, a 27, in the words *σύνθεσις τις* ... a 28 ὥσπερ ἐν ὄντων. Sentences framed on this model: "A like B: so A" are frequent in Plato and Aristotle. Cf. *Pol.* 1286 a 31 ἔτι μᾶλλον ἀδιάφθορον τὸ πολὺ, καθάπερ ὕδωρ τὸ πλεῖον, οὕτω καὶ τὸ πλῆθος τῶν ὀλίγων ἀδιαφθορότερον. See also 423 b 19, *νοίε*.

a 30. κεχωρισμένα, i.e. the separate concepts above designated as severally individua, individua (*ἀδιαίρετα*).

a 31. τὸ ἀσύμμετρον, "incommensurability," viz. with the side of the square. This is with A. a stock instance: cf. *Metaph.* 983 a 15 ἡ τὴν τῆς διαμέτρου ἀσυμμετρίαν κτέ.

a 31. ἂν δὲ γενομένων. On the analogy of the opening words of the chapter Vahlen thus completes the sentence: ἂν δὲ γενομένων ἡ ἐσομένων νόησις ἦ, τὸν χρόνον προσευννοῶν καὶ συντίθεις νοεῖ (Maier, I. p. 25, would add ὁ νοῦς as the subject of νοεῖ: cf. 430 b 6 *infra*).

430 b 1. τὸ γὰρ ψεῖδος ἐν συνθέσει ἀεί, int. ἐστι. There can be no question of falsehood until single notions are combined in a judgment, which, when put into words, is a proposition. The mind either affirms or denies whatever it can thus think as something predicated of something else, τὶ κατὰ τινος, *Metaph.* 1012 a 2 πᾶν τὸ διανοητὸν καὶ νοητὸν ἢ διάνοια ἢ κατάφησιν ἢ ἀπόφησιν. See note on a 27, *σύρτα*.

b 2. ἂν τὸ λευκὸν μὴ λευκόν, int. λέγῃ or νοῇ. The example illustrates the application of the term *σύνθεσις* to falsehood. The thing, *πρᾶγμα*, is *λευκόν*, white. By confusion of thought it is asserted to be not-white. The man substitutes for "white," which is true, "not-white," which is false. This is the typical case of false judgment and false proposition, and it must continually occur in the region of the contingent, as distinct from the necessary. Some accidents are always conjoined with certain substances, others are sometimes conjoined, sometimes disjoined, *ἐνδέχεται τὰναντία*: cf. *Metaph.* 1051 b 9 sqq. Mistake is possible, even frequent, because the thing itself is subject to change. Cf. 428 b 1 sqq. Another way of expressing the nature of contingent things is to say that the same proposition respecting them is both true and false, i.e. true of them at one time when the accident is joined with the substance, false at another time when it is not, *Metaph.* 1051 b 13—15. On this view A. takes the simplest case, a positive and not a negative judgment, if "not-white" be a single notion. Even then falsehood involves *σύνθεσις*, the predicate "not-white" in the proposition is asserted of a subject not mentioned. When Anaxagoras affirmed snow to be not-white, in his judgment he still conjoined "not-white" with snow. In this instance A. has simply substituted *λευκόν* for the more general word *ὅν*, which we find in his description of falsehood in *Metaph.*

1011 b 26 τὸ μὲν γὰρ λέγειν τὸ ὄν μὴ εἶναι ἢ τὸ μὴ ὄν εἶναι ψεῦδος. According to the restoration of the text by Torstrik and Vahlen (see critical notes), there are two examples. A. is made to say "For even if we assert white to be not-white or not-white to be white, we make a conjunction." Them. (109, 27—31 H., 202, 2—6 Sp.) and Philop. (548, 9—11) are assumed to have had two examples before them. See Vahlen, *Aufsätze* I, pp. 11 sq. His ingenious restoration is attractive, the chiasmus, as he shows, p. 13, being characteristic of A. But it is hardly necessary. Simpl. (250, 37—39) gives only one example of false judgment.

b 3. συνέθηκεν, int. δ λέγων or ὁ νοῶν. With Vahlen's reconstruction συνέθηκεν must be taken absolutely, as συντιθείς, 430 b 1 *supra*. But with the traditional text the verb governs τὸ μὴ λευκόν, "the thinker combines 'not-white,'" i.e. with the white thing. The gnomic aorist with ἄν in the protasis corresponds to the present tenses a 31 συντίθεται, b 4 ἔστι. I admit that negative, as well as affirmative, judgments are described as σύνθεσις *Μεταφρ.* 1027 b 24 λέγω δὲ τὸ ἄμα καὶ τὸ χωρὶς ὥστε μὴ τὸ ἐφεξῆς ἀλλ' ἐν τι γίνεσθαι, 1012 a 4 ὅταν μὲν ὥδι συνθῇ φάσα ἢ ἀποφᾶσα, ἀληθεύει, ὅταν δὲ ὥδι, ψεύδεται. But in our passage, I think, A., to avoid unnecessary complication, treats "not-white" as a single notion. If the examples of true judgments do not involve negation (430 a 31 ἀσύμμετρον, not οὐ σύμμετρον), why should it be necessary in false judgments?

b 3 ἐνδέχεται δὲ...4 πάντα. As Vahlen remarks, *op. cit.*, p. 15, there are two possible ways of taking this sentence. The words may mean (1) all that has been said of σύνθεσις may also be said of διαίρεσις, viz. that it may be false as well as true and that it is both ἀπλή and κατὰ χρόνον. All this would be true of διαίρεσις, if the word meant a negative judgment. But, again, the meaning may be (2), we may also give the name διαίρεσις to all which we have called σύνθεσις. Up till now σύνθεσις has stood for positive and negative judgments, ἀπόφασις and κατάφασις: but διαίρεσις may be used with the same extended meaning to include both ἀπόφασις and κατάφασις. Vahlen can cite no authority for διαίρεσις in this extended sense, but thinks the second explanation, which is that of the ancient commentators, to be quite clear from the context. Against (1), which refers the sentence to negative judgments only, it may be urged that it unduly restricts πάντα, takes no account of ἀεὶ b 2 and, as I believe, misunderstands the words ἐάν τὸ λευκόν μὴ λευκόν. As already explained, I consider A.'s statements to hold of all judgments, whether positive or negative, true or false, though his examples are confined to positive judgments, first true a 31, then false b 2 sq. The words of the lemma now present another and complementary theory of the judgment. It has been described as σύνθεσις: it might just as well be described as διαίρεσις, for it involves and implies, not only conjunction by the mind, but also separation and analysis by the mind. A. does not state why, but probably it is because, as he explains, e.g. *Phys.* I. 1, 184 a 21—26, what is presented to, and better known by, us is a confused whole, whether sensation, mental image or notion. The data of sense, imagination and thought are as a rule συγκεχυμένα, confused wholes: Socrates walking, a centaur, the notion of man. Analysis is required, whether these data are presented at first as separate or as a confused whole. In the one case it is the mind that puts them together and refers the parts to the whole, the accidents to the substance, before it can form a judgment. In the other case the confused whole is analysed and from τὸ καθόλου we proceed to τὸ καθ' ἕκαστον, *Phys.* I. 1, 184 a 23 διὸ ἐκ τῶν καθόλου εἰς τὰ καθ' ἕκαστα δεῖ προΐεναι. By such disentanglement and resolution into its single elements of the confused presentation of Socrates walking we distinguish the accident from the subject and so form the judgment; and by analysis of the



notion of man we get the judgment "man is a biped animal." Neither σύνθεσις nor διαίρεσις alone is sufficient to describe the mental process. On the importance of this remark, thus interpreted, both for logic and psychology it is unnecessary to dwell. In every judgment elements are isolated and combined. If Maier's tentative proposal to transpose this sentence were adopted (see critical notes) the admission that what has hitherto been called σύνθεσις might just as well be called διαίρεσις would immediately precede the recognition of νοῦς as the unifying principle. But the force of ἀλλ' οὖν γε would be weakened. Cf. Vahlen, p. 16 sq.

b 4. ἀλλ' οὖν...γε, "but at any rate": cf. Plato, *Crat.* 411 D ἡ φρόνησις· φορὰς γάρ ἐστι καὶ ροῦ νόησις. εἴη δ' ἂν καὶ ὀνησῶν ὑπολαβεῖν φορὰς· ἀλλ' οὖν περὶ γε τὸ φέρεσθαί ἐστιν, *Τοφ.* VI. 13, 150 a 7 εἰ δὲ μήπω τὸ εἰρημένον σφόδρα ἄτοπον διὰ τὸ καὶ ἐπ' ἄλλων συμβαίνειν τὸ τοιοῦτον...ἀλλ' οὖν τό γε τάναντία ὑπάρχειν αὐτοῖς παντελῶς ἄτοπον ἂν δόξειεν εἶναι. οὐ μόνον. Torstrik would transpose these words to follow b 4 ἀληθές, but for their position in the text, due to hyperbaton, Vahlen cites *Rhet.* I. 4, 1360 a 31, I. 15, 1377 a 3 sq., II. 25, 1402 b 32 sq., *Pol.* 1267 a 16 sq., 1282 a 20 sq.

b 5. ἀλλὰ καὶ ὅτι ἦν ἡ ἔσται. Them. (110, I H., 202, 17 Sp.) observes δύο τοῖνυν ἴδια ταῦτα τοῦ νοῦ, τό τε πολλὰ δύνασθαι νοήματα εἰς ἓν συνάγειν ὥσπερ ἓν, καὶ τὸ προσεννοεῖν τὸν χρόνον. Whether we describe the judgment as conjunction or disjunction, if the content of thought belongs to past or future, the temporal relation is necessary to complete it and must be simultaneously thought. τὸ δὲ ἓν ποιοῦν, τοῦτο ὁ νοῦς ἕκαστον. The meaning of ἕκαστον (see note on 424 a 22) is "whether that which unifies does so in this way or in that way," i.e. whether the σύνθεσις be rightly or wrongly performed, or, possibly, whether the unification be called conjunction or disjunction. Cf. Vahlen, l.c., p. 17: "das ἐνοποιεῖν τὰ κεχωρισμένα, wie es die σύνθεσις, richtig oder unrichtig, vollzieht, ist Sache des νοῦς," and Wallace: "the process of thus reducing our ideas into the unity of a single judgment is in each case the work of reason" (p. 163). It may be asked whether ἕκαστον is accusative governed by ποιοῦν or nominative in apposition with it. I incline to the latter view. In either case its place at the end of the sentence is due to the interposition by hyperbaton of τοῦτο ὁ νοῦς, and is no more remarkable than the similar position of ἕκαστον in 425 b 24. Simplicius takes the former view: 251, 8 τὴν δὲ λέξιν ὡς συντακτέον· τὸ ἕκαστον τῶν συμπλεκόμενων νοημάτων ἓν ποιοῦν, τοῦτο ὁ νοῦς ἐστι: cf. Philop. 548, 29 τὸ δὲ ποιοῦν τούτων ἕκαστον ἓν ὁ νοῦς. If this were right, Bekker's comma before τοῦτο would be of doubtful utility, for it would separate ποιοῦν from its object ἕκαστον. Vahlen, p. 17, presents the sentence without a comma. The meaning on the view of Simplicius is "that which makes each and every σύνθετον one."

**430 b 6—20.** What is whole and indivisible is either (1) potentially or (2) actually so. When we are dealing with what is quantitative, there is no difficulty in thinking an actually indivisible whole, e.g. a unit of length or a line, or in thinking it in actually indivisible time. Divisibility or indivisibility of time goes with divisibility or indivisibility of units of length. [Here, then, we have a unitary whole. Let us see what can be made, first of the half, and then of the double, of such a unit.] If we suppose the time divided, we cannot say what is thought in each half of the time. The two halves of the line have no actual existence unless the line be actually divided. If, however, we think each of the two halves of the line separately, we simultaneously divide the time also. The one line has then virtually become two lines (οἶονεὶ μήκη), and if we think the double, or the one whole line as made up of two halves, the time in which

we think it is also made up of two halves of time [§ 3]. But there is another class of indivisible, viz. the notional, not quantitative, unit. This also we think in an indivisible time and by an indivisible mental act. But the divisibility of the notional unit is to be distinguished from the divisibility of the quantitative unit. The notional unit is also divisible, but its divisibility is incidental. It can be separated into parts, but such divisibility is external and foreign to it and no part of its essence. It is not divisible in so far as the act of thought and the time taken to accomplish it are divisible: when we deal with notional units the act of thought and the time it takes are instantaneous and absolutely indivisible. Herein lies the distinction between the notional unit and the quantitative unit. In the notional units also there is an element of indivisibility, the same which, when we are dealing with quantitative magnitudes, makes units of the time and the length; and this element constitutes the unity of everything which is continuous, as well as of time or length [§ 4].

430 b 6. διχῶς. It is a question whether λέγεται or ἐστὶν should be supplied. For the former may be cited 417 a 12 διχῶς ἂν λέγοιτο καὶ ἡ αἴσθησις, ἡ μὲν ὡς δυνάμει, ἡ δὲ ὡς ἐνεργείᾳ, 426 a 23 διχῶς γὰρ λεγομένης τῆς αἰσθήσεως καὶ τοῦ αἰσθητοῦ, τῶν μὲν κατὰ δύναμιν τῶν δὲ κατ' ἐνεργείαν: for the latter 419 b 4 ἔστι δὲ διττὸς ὁ ψόφος· ὁ μὲν γὰρ ἐνεργείᾳ τις, ὁ δὲ δυνάμει, 428 a 6 αἴσθησις μὲν γὰρ ἦτοι δύναμις ἢ ἐνεργεία, *Phys.* IV. 3, 210 a 26 διχῶς δὲ τοῦτ' ἐστίν, ἦτοι καθ' αὐτὸ ἢ καθ' ἕτερον, *De Caelo* III. 1, 299 a 20 τὰ δὲ πάθη διαιρετὰ πάντα διχῶς· ἡ γὰρ κατ' εἶδος ἢ κατὰ συμβεβηκός. As there are two sorts of sensation and two sorts of sound, so there are two sorts of indivisible, the one potential, the other actual. For the latter cf. b 8 *infra*, for the former b 11. The indivisible whole, potentially existent, is illustrated by the half of an undivided line which, so long as the mind thinks the whole line as undivided, though it is implicitly present, does not actually exist. Cf. *Metaph.* 1048 a 32 λέγομεν δὲ δυνάμει οἶον ἐν τῷ ξύλῳ Ἑρμῆν καὶ ἐν τῇ ὄλῃ [int. γραμμῇ] τὴν ἡμίσειαν, ὅτι ἀφαιρεθεῖν ἂν. The statue exists in the wood and the half of the line in the whole potentially, because it is possible for the wood to be carved and the whole line to be divided into two halves, and then the statue and the half line would come into actual existence. Cf. *Phys.* VIII. 8, 263 a 28 ἐν δὲ τῷ συνεχεῖ ἔστι μὲν ἄπειρα ἡμίση, ἀλλ' οὐκ ἐντελεχεῖα ἀλλὰ δυνάμει.

b 6. ἡ δυνάμει ἢ ἐνεργείᾳ. These words, I regret to say, are mistranslated on p. 137. As just explained, the sentence should have run thus: "according as the whole, which is indivisible, is either potential or actual." The Greek commentators supposed these words to mean "either not potentially, or not actually, divisible." So Them. 110, 5 H., 202, 22 Sp. ἡ γὰρ ὅτι μήτε δυνάμει μήτε ἐνεργείᾳ τοῦτό ἐστι διαιρετόν, ὥσπερ εἶχε τὰ ἄντα εἶδη καὶ ἡ στιγμή, ἡ ὅτι δυνάμει μὲν διαιρετόν ἐνεργείᾳ δὲ ἀδιαιρετόν, ὥσπερ ἡ γραμμὴ καὶ πᾶν μέγεθος, *Simpl.* 251, 14 τὸ μὲν ὡς τὸ εἶδος οὐδαμῇ ὃν διαιρετόν οὔτε ἐνεργείᾳ οὔτε δυνάμει, τὸ δὲ ὡς τὸ μήκος καὶ πᾶν συνεχὲς ἐνεργείᾳ μόνον ὃν ἀδιαιρετόν, δυνάμει δὲ πῶς διαιρετόν, ἢ καὶ τῷ ὄντι πεφυκός διαρῆσθαι. Philop. 549, 5—7 has a different, but not a better, account. There are very grave objections to the way in which Them. and *Simpl.* take the words. (1) It does not do justice to ἡ...ἡ. Them. says that both of his divisions are ἐνεργείᾳ ἀδιαιρετόν, for which he substitutes οὐκ ἐνεργείᾳ διαιρετόν, the difference being that the second is, what the first is not, δυνάμει διαιρετόν. (2) They confuse "potentially indivisible" with "not potentially divisible," and without the strongest evidence it is impossible to believe that A. was guilty of this confusion. Throughout his logic he invariably distinguishes between the two propositions "This is not B" and "This is not-B." Cf., however, *Metaph.* 1073 a 23 ἡ μὲν γὰρ ἀρχὴ καὶ τὸ πρῶτον τῶν ὄντων ἀκίνητον καὶ καθ' αὐτὸ καὶ κατὰ συμβεβηκός, which must mean "has no motion, either proper to it (καθ' αὐτὸ) or

accidental (κατὰ συμβεβηκός),” i.e. οὐκ ἔστι κατὰ συμβεβηκός κινητόν. (3) According to Them., δυνάμει ἀδιαίρετον has the priority: it is more truly indivisible than ἐνεργείᾳ ἀδιαίρετον. But surely this is contrary to all that we are told by A. of the relationship of δύναμις to ἐνεργεία. (4) Apparently the object of this interpretation is to force the distinction δυνάμει ἀδιαίρετον, ἐνεργείᾳ ἀδιαίρετον into correspondence with τῷ εἶδει ἀδιαίρετον, κατὰ τὸ ποσὸν ἀδιαίρετον below. Themistius’ examples of ἐνεργείᾳ ἀδιαίρετον are line and magnitude, which are κατὰ τὸ ποσὸν ἀδ., and those of δυνάμει are αἴδια εἶδη, immaterial forms, with the addition of points. The fact is that the inconveniences of a negative attribute “indivisible” are very great when what is meant is a positive conception, like “single,” “one,” “whole.” Similar inconvenience attaches to the use of other negative terms, “absolute,” “infinite,” “unknowable,” “unconditioned,” when they are used, as they often are, to denote positive conceptions. If an object of thought is in its own nature divisible, so that the act of thinking it may become two acts and the time in which it is thought two times, to apply the term “indivisible” to object, act and time is a severe strain on its meaning.

b 7. οὐθὲν κωλύει. This answers to b 6 ἐπεὶ. It is because the indivisible whole is sometimes potential, sometimes actual, and so subject to becoming, that the mind by thinking the line or whole of length can at the same time bring τὸ ἀδιαίρετον, which is as yet only δυνάμει νοητόν, into actual existence.

b 8. ἀδιαίρετον γὰρ ἐνεργείᾳ. Apart from the act of the mind thinking it, τὸ ἀδιαίρετον in the case of a line or any magnitude would never have actual existence, for a line or magnitude is in itself divisible ad infinitum. The mind thinks the whole of length without reference to the parts into which it may be divided. For the mind, which thinks it as such, it is actually indivisible as well as undivided.

b 8. ἐν χρόνῳ ἀδιαίρετῳ. Not only does the mind’s act make the length, which is in itself divisible, indivisible at the time it is thought: it also causes the same transformation in time, which is *per se* continuous and divisible. Cf. *De Sensu* 6, 446 a 30 ὁ δὲ χρόνος πᾶς διαίρετός. If the object thought be ἀδιαίρετον, so also must be the time in which it is thought. The act of thinking, which to A. is symbolised not by motion, but by rest or pause (407 a 32 sq.), may take time, but at every instant of such time the act is complete in itself: αἶμα νοεῖ καὶ νενόηκεν. Cf. *Phys.* IV. 10, 218 b 29 εἰ δὴ τὸ μὴ οἶσθαι εἶναι χρόνον τότε συμβαίνει ἡμῖν, ὅταν μὴ ὀρίζωμεν μηδεμίαν μεταβολήν, ἀλλ’ ἐν ἐνὶ καὶ ἀδιαίρετῳ φαίνεται ἡ ψυχὴ μένειν, ὅταν δ’ αἰσθώμεθα καὶ ὀρίσωμεν, τότε φανερὸν γεγονέναι χρόνον, φανερόν ὅτι οὐκ ἔστιν ἄνευ κινήσεως καὶ μεταβολῆς χρόνος, where the protasis expresses the writer’s own conviction.

b 9 ὁμοίως γὰρ... 10 μήκει. Break length or anything continuous, συνεχές, in two, and you think it in two portions of time: keep it whole, and you think it in one. Cf. *Phys.* VI. 2, 233 a 10 φανερόν ὅτι πᾶς χρόνος ἔσται συνεχές. αἶμα δὲ ὄντων καὶ ὅτι μέγεθος ἅπαν ἐστὶ συνεχές· τὰς αὐτὰς γὰρ καὶ τὰς ἴσας διαίρεσεις ὁ χρόνος διαίρεται καὶ τὸ μέγεθος.

b 10. ἐν τῷ ἡμίσει... ἐκάτερος, int. τοῦ χρόνου.

b 11. οὐ γὰρ ἔστιν, int. ἐκάτερον τὸ ἥμισυ τοῦ μήκους.

b 11 χωρὶς δ’ ἐκάτερον... 13 μήκει. If we mentally divide the line and think each of the two halves separately, they become in their turn virtually indivisible, wholes of length, and the time is similarly divided into what are virtually indivisible wholes of time. αἶμα brings out the full force of b 9 sq. *supra*. οἷον ἐν μήκει, int. νοεῖ. Whether the line be actually divided or not, it is mentally divided, and the unifying principle, the mind, makes its parts, as it were, new wholes of length.

b 13. ὡς ἐξ ἀμφοῖν, int. ὃν τὸ μῆκος νοεῖ ὁ νοῦς. The conception of the unit is more completely brought out if we contrast it first with half, then with double. First the line was thought as undivided whole, then each of its two parts was thought separately; now the mind considers the whole or double as made up of its two parts.

b 14. ἐπ' ἀμφοῖν, int. νοεῖ. The force of the preposition seems to be "corresponding to," "in the times which correspond to the two halves of the divided line." The whole time of thinking is regarded as made up of the times in which each half is thought separately.

b 14. τὸ δὲ μὴ κατὰ ποσὸν...τῷ εἶδει, int. ἀδιαίρετον. So far we have been dealing with continuous objects, length and time, which *per se* are divisible and only *per accidens* indivisible. We now come to another class of objects of thought, which are *per se* indivisible and only *per accidens* divisible. A clue to the distinction is furnished by *Metaph.* 1016 b 23 πανταχοῦ δὲ τὸ ἐν ἡ τῷ ποσῷ ἢ τῷ εἶδει ἀδιαίρετον, 1053 a 18 οὕτω δὴ πάντων μέτρον τὸ ἐν, ὅτι γνωρίζομεν ἐξ ὧν ἐστὶν ἡ οὐσία διαιροῦντες ἢ κατὰ τὸ ποσὸν ἢ κατὰ τὸ εἶδος. διὰ τοῦτο τὸ ἐν ἀδιαίρετον, ὅτι τὸ πρῶτον ἐκάστων ἀδιαίρετον. οὐχ ὁμοίως δὲ πᾶν ἀδιαίρετον, οἷον πούς καὶ μονάς, ἀλλὰ τὸ μὲν πάντη, τὸ δ' εἶναι ἀδιαίρετον πρὸς τὴν αἴσθησιν ἐθέλει, 1053 b 4 τὸ ἐν εἶναι μάλιστα ἐστὶ...μέτρον τι, καὶ κυριώτατα τοῦ ποσοῦ, εἶτα τοῦ ποιοῦ...ἔσται δὲ τοιοῦτον τὸ μὲν ἐὰν ἢ ἀδιαίρετον κατὰ τὸ ποσόν, τὸ δ' ἐὰν κατὰ τὸ ποῖον, 1084 b 14 ἀλλ' ἀδιαίρετον καὶ τὸ καθόλου καὶ τὸ ἐπὶ μέρους καὶ τὸ στοιχείον, ἀλλὰ τρόπον ἄλλον, τὸ μὲν κατὰ λόγον τὸ δὲ κατὰ χρόνον (cf. Pseudo-Alex. *ad loc.* 774, 3—15 H.), 1052 a 31 ἀριθμῷ μὲν οὖν τὸ καθ' ἑκάστον ἀδιαίρετον, εἶδει δὲ τὸ τῷ γνωστῷ καὶ τῇ ἐπιστήμῃ, 999 a 1—6. Of the latter I cite a 2 ἀδιαίρετον δὲ ἅπαν ἢ κατὰ τὸ ποσὸν ἢ κατὰ τὸ εἶδος, πρότερον δὲ τὸ κατ' εἶδος. As Bonitz in his commentary *ad loc.* observes, the distinction between the two kinds of ἀδιαίρετον under consideration must not be confused with that between numerical unity, ἐν τῷ ἀριθμῷ, and specific unity, ἐν τῷ εἶδει. Two or more things which fall under the same species are said to be ἐν τῷ εἶδει, i.e. specifically identical, but the term ἐν κατὰ τὸ εἶδος is applied to an infima species, which cannot itself be further subdivided. And this is why logical priority is differently defined in the one case and in the other. For numerical unity, ἐν τῷ ἀριθμῷ, denotes a more perfect unity than ἐν τῷ εἶδει, the former comprehends the latter and all other kinds of unity (ἐν τῷ εἶδει, τῷ γένει, τῷ κατ' ἀναλογίαν). But in the distinction we are investigating between ἀδιαίρετον τῷ εἶδει or κατὰ τὸ εἶδος and ἀδιαίρετον κατὰ τὸ ποσόν, logical priority attaches to ἐν κατὰ τὸ εἶδος, because εἶδος is the constitutive form which makes the thing what it is, while ποσόν is more nearly akin to matter: in fact, τὸ συνεχές is logical or intelligible matter. Hitherto we have been dealing with wholes indivisible κατὰ τὸ ποσόν. We are now introduced to the infimae species: ἐν κατὰ τὸ εἶδος ea est species, quae non ipsa iterum in species dividitur (Bonitz, *ad Metaph.* 999 a 1—6). The members of such a species are united by the single notion or definition which comprehends them all, *Metaph.* 1016 b 33 εἶδει δ' [int. ἐν] ὃν ὁ λόγος εἷς. The infima species may be divided into its members, but not as a genus is divided into species, *ib.* 999 a 5 οὐ γάρ ἐστι γένος ὁ ἄνθρωπος τῶν τινῶν ἀνθρώπων. As we shall see, A. calls the division of an infima species a division *per accidens*. Any species incapable of further division into subspecies would answer to the description of the text, "a whole not quantitatively indivisible" (and therefore not συνεχές τι, a continuous whole of magnitude), "but specifically indivisible." Cf. also *Metaph.* 1087 b 33 sqq.: "Plainly the One signifies a measure and in each class of things the One which is measure is predicated of a different subject. In music the unit is a quarter tone, in length or magnitude a finger's-breadth or a foot or

some similar unit, in rhythm a beat or a syllable, and similarly in weight some definite standard of weight. And so generally of whatever the unit is predicated; in things which have quality the unit is something which has quality, in quanta the unit is a quantum, and the unit-measure is indivisible, in the first case specifically, in the latter as presented to sense, 1087 a 37 καὶ κατὰ πάντων δὲ τὸν αὐτὸν τρόπον, ἐν μὲν τοῖς ποιοῖς ποιόν τι, ἐν δὲ τοῖς ποσοῖς ποσόν τι (καὶ ἀδιαίρετον τὸ μέτρον, τὸ μὲν κατὰ τὸ εἶδος τὸ δὲ πρὸς τὴν αἰσθησιν). And all this implies that there is no unity existent *per se*."

b 15. ἀδιαίρετῳ τῆς ψυχῆς. If this meant a part or faculty of the soul, the omission of any accompanying noun or pronoun, like μέρει or τινί, could be paralleled. Cf. 426 b 29 ἀχώριστον καὶ ἐν ἀχωρίστῳ χρόνῳ, 427 a 14 ἔστιν ὡς κεχωρισμένῳ, both of which passages are very similar to the one before us. Cf. also *De Sensu* 7, 449 a 8 ἀνάγκη ἄρα εἶναι τῆς ψυχῆς, ὅτι πάντα αἰσθάνεται, 448 b 20 ἅμα μὲν, ἑτέρῳ δὲ τῆς ψυχῆς αἰσθάνεσθαι, καὶ οὐ τῷ ἀτόμῳ, οὕτω δ' [ἢ οὕτω, coni. Ross] ἀτόμῳ ὡς παντὶ ὄντι συνεχεῖ, 449 a 19 ὥστε καὶ αἰσθάνοιτ' ἂν ἅμα τῷ αὐτῷ καὶ ἐνί. Here the faculty seems to be identified with its operation, ἐνέργεια. Cf. *Metaph.* 1075 a 3—5: if νοῦς, when it thinks ὅσα μὴ ὕλην ἔχει, is identical with τὸ νοούμενον and ἡ νόσις is identical with τὸ νοούμενον, then ἡ νόσις is identical with νοῦς. Themistius supplies νόησι: 110, 18 H., 203, 11 Sp. ἐν χρόνῳ ἀδιαίρετῳ νοεῖ καὶ νόησει ἀδιαίρετῳ [so Heinze], 110, 24 H., 203, 19 Sp. ἀμερεῖ τῇ νόησει. Two of our inferior MSS., T and V, actually read ψυχῆς νόησει. For τῆς ψυχῆς, not τοῦ νοῦ, cf. 430 a 13, 431 a 14.

b 16 κατὰ συμβεβηκός... 17 ἀδιαίρετα. As we are here dealing with actual thinking, I take ὅ νοεῖ to mean a single thought, one link in the chain of thoughts of which actual thinking consists: 407 a 7 ἡ δὲ νόσις τὰ νοήματα. It need not always mean, as ὅ διανοούμεθα does 414 a 12 sq., 429 a 23, a part of the soul. Beyond this it is rash to assert anything confidently about the meaning of this sentence. Still, we may make conjectures and state divergent views. We have to find a predicate which κατὰ συμβεβηκός may qualify and a subject for that predicate. It would be natural to attach κατὰ συμβεβηκός to something expressed in the preceding sentence, which might serve as predicate; but this can hardly be νοεῖ or ἀδιαίρετον or ἀδιαίρετῳ, for the specific unity is not κατὰ συμβεβηκός νοητὸν nor κατὰ συμβεβηκός ἀδιαίρετον and, even if the act of thinking it and the time in which it is thought were *per accidens* indivisible, the fact would not help to explain the words which follow. It only remains to understand διαίρετον or διαίρετά. Something, we may assume, is declared to be accidentally divisible. What is *per se* indivisible may be *per accidens* divisible and, if we take this clue, there are two possible subjects for the predicate "accidentally divisible." These are (1) the notional unity itself and (2) the act of thinking it and the time which that act takes.

Suppose we take (1): the specific unity, then, is accidentally divisible, but, the writer continues, not in the sense that the act of thinking it and the time in which it is thought are divisible, but in the sense that they are indivisible. Their indivisibility, then, we learn, renders any divisibility which can be attached to the specific unity purely extraneous, adventitious, foreign to its nature. It appears to follow that the act of thinking an infima species, e.g. humanity, is instantaneous. As Them. would say, we do not think half the notion when we hear the first two syllables "human-" and the rest of it when we catch "ity": cf. *First.* 110, 22 H., 203, 17 Sp. ἀκούει μὲν γὰρ ἐν χρόνῳ, νοεῖ δὲ οὐκ ἐν χρόνῳ, ἀλλ' ἐν τῷ νῦν ὅπερ ἡ οὐδὲ ὅλως χρόνος ἐστὶν ἢ ἀμερὴς χρόνος. καὶ αὐτὸς δὲ ἀμερεῖ τῇ νόησει νοεῖ, οὐ συμπαρεινόμενος τῷ ὀνόματι οὐδὲ κατὰ μέρος τοῦ ὀνόματος καὶ καθ' ἐκάστην συλλαβὴν προσλαμβάνων τι μέρος τοῦ νοήματος.

ἀλλὰ τὸ μὲν ὄνομα διαιρετόν, ἀδιαίρετον δὲ τὸ νόημα. εἰ δὲ καὶ τὸ νόημα διαιρετὸν φιλονικοίη τις λέγειν, κατὰ [τὸ] συμβεβηκὸς ἂν αὐτὸ λέγοι διαιρετόν, καὶ οὐχ ἢ αὐτὸ διαιρετόν...πολλὰ δὲ κατὰ συμβεβηκὸς διαιρετὰ καὶ οὐχ ἢ αὐτὰ διαιρετὰ, ἀλλ' ἢ ἐκεῖνα δι' ὧν γνωρίζεται [by ἐκεῖνα Them. intends here τοῦτομα καὶ ἡ φωνή]. On this view ἐκεῖνα anticipates  $\phi$  νοεῖ...17 χρόνῳ and refers exclusively to the act of thought, and the time, relative to the specific unity, while  $\eta$ , "so far as," approximates to "because": οὐχ ἢ...ἀλλ' ἢ, non quo...sed quia. Or, again, it is conceivable that ἐκεῖνα,  $\phi$  νοεῖ καὶ ἐν  $\phi$  χρόνῳ may refer back to the act and time of thinking τὰ μήκη, and then  $\eta$  will mean "in the same way as," implying ταύτη with the predicate διαιρετόν. For when the object is a quantum, the act of thinking it may become two acts, the time two times, as we saw b 9—13 *supra*.

(2) But let us suppose that the time and the act of thought are made the subject to a predicate "accidentally divisible." We have now to enquire what is meant by ἐκεῖνα. Presumably it is the act and time of thinking in the former case when the object was something continuous, like length. Or it might be τὰ μήκη themselves. Then the words mean: "but in this case the act and time of thinking are *per accidens* divisible, not in the same way (viz. *per se*) as the act and time of thinking in the former case [or the objects of thought in the former case] are divisible, but in the same way (viz. *per accidens*) as they are indivisible." Formerly, when the object was a quantum, the act and time of thinking, like the object, were *per se* divisible and only *per accidens* indivisible; now that the object is an infima species, the act and time of thinking it are *per se* indivisible and only *per accidens* divisible.

Prof. Bywater's transposition (see critical notes) would have the effect of referring this passage and what follows it as far as b 20 μήκει exclusively to the first kind of ἀδιαίρετα, which are quanta, and he would alter b 16  $\phi$  νοεῖ into  $\delta$  νοεῖ (=τὸ μήκος). But see Maier, *op. cit.* I., p. 32, n. 1. Torstrik was led to bracket the words b 17 ἀλλ' ἢ ἀδιαίρετα by his construction of the previous line, viz. κατὰ συμβεβηκὸς δέ, καὶ οὐχ ἢ ἐκεῖνα [int. νοεῖ], διαιρετὰ  $\phi$  νοεῖ καὶ ἐν  $\phi$  χρόνῳ. Thus the way in which he took ἢ ἐκεῖνα [int. νοεῖ] led him justly to the conclusion that ἢ ἀδιαίρετα comes to the same thing and is superfluous. Biehl followed Torstrik in bracketing the clause; but, if recourse must be had to the knife, it would be preferable to adopt Prof. J. Cook Wilson's suggestion and bracket b 16  $\phi$  νοεῖ καὶ ἐν  $\phi$  χρόνῳ. Then ἐκεῖνα must refer to τὰ μήκη and it is not impossible that a marginal gloss  $\delta$  νοεῖ καὶ ἐν  $\phi$  χρόνῳ, pointing this out correctly, should, when incorporated in the text, become altered to  $\phi$  νοεῖ κτέ. by assimilation to b 15 ἀδιαίρετόν τῆς ψυχῆς.

b 17. ἔνεστι γὰρ κἀν τοῦτοις. Taking the text as we find it, we must by τοῦτοις understand τοῖς τῷ εἶδει ἀδιαίρετοις. Thus τοῦτοις, as contrasted with b 16 ἐκεῖνα, will be the specific unities themselves, as distinct from something; either, on one view, from the act and time of thinking them, or, on another view, from the act and time of thinking τὰ μήκη, or from τὰ μήκη themselves. It is true the Greek commentators unanimously refer τοῦτοις to τὰ συνεχῆ: Them., 110, 36 sqq. H., 204, 7 sqq. Sp., Simpl. 256, 4 sqq., Philop. 551, 22 sqq. (the last more definitely makes them time and mental image, obviously connecting κἀν τοῦτοις with 430 b 16  $\phi$  νοεῖ καὶ ἐν  $\phi$  χρόνῳ). It is not, however, necessary that, because ἀδιαίρετόν τι makes both time and length one, time and length and other continuous quantities should be intended by κἀν τοῦτοις. If we attend to the καί, the presumption is rather the other way.

b 18. ἀλλ' ὥς οὐ χωριστόν. This phrase, defining the nature of that unity of indivisibles which belongs to τὰ τῷ εἶδει ἀδιαίρετα, I take to be a disclaimer of

the Pythagorean and Platonic doctrine of unity, for which see *Metaph.* 1053 b 9—1054 a 19. Unity is, A. holds, no separately existent entity in the universe, there is no οὐσία τις αὐτοῦ καθ' αὐτὸ τοῦ ἐνός, *ib.* 1053 b 11, 1088 a 3, no φύσις τις χωριστὴ τῶν ἄλλων, 1053 b 22. Unity is to be found in the things which the mind thinks as one, whether species or quantities, and nowhere else. The same question is treated even more fully in *Metaph.* 1045 a 7—b 7: the conclusion reached is stated most explicitly 1045 a 31 οὐδὲν γὰρ ἐστὶν αἴτιον ἑτερον τοῦ τὴν δυνάμει σφαῖραν ἐνεργείᾳ εἶναι σφαῖραν, ἀλλὰ τοῦτ' ἦν τὸ τί ἦν εἶναι ἐκατέρω and 1045 a 36 ὅσα δὲ μὴ ἔχει ὕλην, μήτε νοητὴν μήτε αἰσθητήν, εὐθύς ὅπερ ἐν τι [εἶναι] ἐστὶν ἕκαστον, ὥσπερ καὶ ὅπερ ὄν τι, τὸ τόδε, τὸ ποῖον, τὸ πᾶν. διὸ καὶ οὐκ ἔνεστιν ἐν τοῖς ὀρισμοῖς οὔτε τὸ ὄν οὔτε τὸ ἐν, καὶ τὸ τί ἦν εἶναι εὐθύς ἐν τί ἐστὶν ὥσπερ καὶ ὄν τι. διὸ καὶ οὐκ ἔστιν ἑτερόν τι αἴτιον τοῦ ἐν εἶναι σὺδενὶ τούτων, οὐδὲ τοῦ ὄν τι εἶναι· εὐθύς γὰρ ἕκαστόν ἐστιν ὄν τι καὶ ἐν τι, οὐχ ὥς ἐν γένει τῷ ὄντι καὶ τῷ ἐνί, οὐδ' ὥς χωριστῶν ὄντων παρὰ τὰ καθ' ἕκαστα. The sphere presents the more ordinary case of something compounded of form and matter, though here the ὕλη is νοητή, not αἰσθητή: the line, τὸ μήκος, with which we have been dealing 430 b 8 sqq. in this respect resembles the sphere. The cause of the unity of the line, as of the sphere, is the τί ἦν εἶναι. From such compounds A. passes on to quiddities, which have no matter, and asserts in the plainest terms that they require no external cause of unity, αἴτιον τοῦ ἐν εἶναι, for each of them is the cause of its own unity, being itself τί ἦν εἶναι, and nothing else. Yet they are immanent in, not separate from, particular things, οὐδ' ὥς χωριστῶν ὄντων παρὰ τὰ καθ' ἕκαστα. With this agrees precisely *Metaph.* 1052 a 29 τὰ μὲν δὴ οὕτως ἐν ἡ συνεχὲς ἡ ὅλον, τὰ δὲ ὡν ἂν ὁ λόγος εἰς ἡ. τοιαῦτα δὲ ὡν ἡ νόησις μία· τοιαῦτα δὲ ὡν ἀδιαίρετος· ἀδιαίρετος δὲ τοῦ ἀδιαίρετου εἶδει ἡ ἀριθμῶ. The term "one" is applied not only to things continuous, but also to those things which have a single concept or a single definition, and such are those which can be thought in a single mental act, in an indivisible act of thought, the mental act being indivisible, provided its object is itself either specifically or numerically indivisible: whence it follows that primarily unity belongs to that which makes substances one, *Metaph.* 1052 a 33 ὥσθ' ἐν ἂν εἴη πρῶτον τὸ ταῖς οὐσίαις αἴτιον τοῦ ἐνός. No one who has followed the argument so far can fail to identify this with the τί ἦν εἶναι. Cf. *ib.* 1016 a 32—b 3, of which I cite 1016 b 1 ὅλως δὲ ὡν ἡ νόησις ἀδιαίρετος ἡ νοοῦσα τὸ τί ἦν εἶναι, καὶ μὴ δύναται χωρῖσαι μήτε χρόνῳ μήτε τόπῳ μήτε λόγῳ, μάλιστα ταῦτα ἐν, καὶ τούτων ὅσα οὐσίαι. Maier, however, whose exposition has greatly contributed to clear up the whole passage, takes the words of our lemma somewhat differently, I, p. 32, *note*. He compares χωρὶς b 11 *supra* and understands A. to assert here that the mental act is incapable of being logically divided, whereas in contemplating a length the act, though itself one and indivisible, could, if we chose, be separated or divided. In that case nothing is added by οὐ χωριστόν, for that the act is ἀδιαίρετον καθ' αὐτὸ is implied in 430 b 15—17 on Maier's own interpretation of that passage. δ: "and this it is which," a use of the relative more frequent in Latin than in Greek. Cf. 428 b 24, *note*. Whatever it is which constitutes the unity of the specific notion also makes continuous quantities one.

b 19. μήκος. Supply ἐν. Cf. *Metaph.* 994 b 23 οὐ γὰρ ὅμοιον ἐπὶ τῆς γραμμῆς, ἡ κατὰ τὰς διαρέσεις μὲν οὐχ ἴστανται, νοῆσαι δ' οὐκ ἔστι μὴ στήσαντα. καὶ τοῦθ' ὁμοίως...20 μήκα. This sentence shows that length and time merely stand for continuous, and therefore divisible, quantities in general. The emphasis is on τῷ συνεχεῖ. That the continuity and therefore the unity of the continuous has its cause in the form and quiddity may be inferred from *Metaph.* 1052 a 19 sqq., where, after laying down that what is continuous is *ipso facto* in a greater or

less degree one, A. continues (a 22) ἔτι τοιοῦτον [int. ἐν] καὶ μᾶλλον τὸ ὅλον καὶ ἔχον τινὰ μορφήν καὶ εἶδος· μάλιστα δ' εἴ τι φύσει τοιοῦτον καὶ μὴ βία... ἀλλ' ἔχει τι ἐν αὐτῷ τὸ αἴτιον αὐτῷ τοῦ συνεχές εἶναι. Cf. *Metaφh.* 1053 a 24 ἴσως γὰρ πᾶν συνεχές διαμερόν. Surfaces and solids, no less than lines, are continuous and divisible, εἰς συνεχῇ δυνάμει διαμερέα, according to *Metaφh.* 1020 a 8—14. This is the fundamental assumption of the mathematical sciences, καὶ τὸ νοητὸν λαμβάνουσι διαμερόν, *De Caelo* III. 7, 306 a 27, and it applies to μήκος no less than to σῶμα, of which A. is there speaking.

**430 b 20—31.** As to the way in which we know the point and indivisibles of that kind, it is like the way in which we know privation (στέρησις). The point, being the negation or antithesis of the divisible, is known exactly as evil and black are known by negation of the positive qualities good and white [§ 5]. And, if this be so, the knowing subject will be a potentiality of contraries contained within itself. If there is any knowing subject in whose thought there is no contrary, this knowing subject will be its own object of knowledge, will be actually operant and immaterial [§ 6]. All predications which connect an attribute with a subject are true or false, but this is not always the case with thought. When we think the concept in terms of the quiddity, we do not predicate any attribute of a subject. Such exercise of thought upon immaterial objects corresponds to the exercise of a special sense on its proper object, which is never fallacious [§ 7].

**430 b 20 ἡ δὲ στιγμή... 23 γνωρίζει.** A new paragraph should begin here. On this passage see Them. III, 13—31 H., 204, 27—205, 24 Sp., Simpl. 256, 19—257, 10, Philop. 552, 2—26. *πᾶσα διαίρεσις*, “every dividing mark.” This will denote the geometrical point, in so far as it serves to divide lines or lengths, or forms a kind of limit or boundary: cf. *Metaφh.* 1060 b 14 sq., 994 b 23 sq. It will also denote, as Them. and Simpl. hold, the present instant, the “now,” regarded as dividing time past from time future: probably also the arithmetical unit, *μονάς*. The line and surface may also be included, but only in so far as they are privations, i.e. the surface because it is without thickness and the line because it is without breadth or thickness. Cf. *Metaφh.* 1016 b 24 τὸ μὲν οὖν κατὰ τὸ ποσὸν καὶ ἡ ποσὸν ἀδιαίρετον, τὸ μὲν πάντη καὶ ἄθετον λέγεται μονάς, τὸ δὲ πάντη καὶ θέσιν ἔχον στιγμή, τὸ δὲ μοναχῇ [int. διαμερόν] γραμμή, τὸ δὲ διχῇ ἐπίπεδον, τὸ δὲ πάντη καὶ τριχῇ διαμερόν κατὰ τὸ ποσὸν σῶμα. In *Metaφh.* 1002 a 18 ἔτι δὲ φαίνεται ταῦτα [int. τὰ μήκη καὶ αἱ στιγμαί] πάντα διαίρεσις ὄντα τοῦ σώματος, τὸ μὲν εἰς πλάτος, τὸ δ' εἰς βάθος, τὸ δ' εἰς μήκος. πρὸς δὲ τοῦτοις ὁμοίως ἔνεστιν ἐν τῷ στερεῷ ὁποιοῦν σχῆμα ἢ οὐδέν, *id.* a 34—b 11, 994 b 22—25 not only is the point treated as the division of a line, but the line as the division of a surface, and the surface as the division of a solid. When the divided parts are reunited, the divisions disappear. Thus if *AC* and *CB*, the segments of the line *AB*, are reunited, the point *C*, which had two functions, serving as the extremity of *AC* and the extremity of *CB*, disappears.

**b 21. τὸ οὕτως ἀδιαίρετον.** The point and the “now” are indivisibles of another order from those previously considered. They are indivisible not καθ' αὐτά, but by absence or privation of extension and divisibility, τῇ στέρησει τοῦ συνεχούς (Them. III, 15 H., 205, 1 Sp.), πάντη μὲν ἀδιαίρετα, κατὰ τὴν ἀπόπτωσιν δὲ τῶν διαμερῶν ἔχοντα τὸ ἀδιαίρετον (Simpl. 256, 20 sq.). The surface is less continuous and therefore less divisible than the solid through the absence of the dimension of depth; the line less continuous and divisible than the surface, because it has neither breadth nor depth, although it is still extended, and therefore divisible, in the one dimension of length; the point, losing even this



last dimension, ceases to be divisible at all: unlike the line and surface, it is πάντῃ ἀδιαίρετον, Simpl. 256, 21—27, Philop. 552, 16—18. δηλοῦνται, “is disclosed or discovered to us.” - Cf. *Metaφh.* 1054 a 26 λέγεται δ' ἐκ τοῦ ἐναντίου καὶ δηλοῦνται τὸ ἐν, 1032 b 4 ἐκείνης γὰρ [int. τῆς ὑμείας] ἀπουσία δηλοῦνται ἡ νόσος. The word δηλοῦν is a vague, non-technical term like γνωρίζειν, however the knowledge be obtained. ὥσπερ ἡ στέρησις. As, e.g., rest is perceived by the negation of motion, τῷ μὴ κινεῖσθαι, and number by the negation of continuity, τῇ ἀποφάσει τοῦ συνεχοῦς, 425 a 18 sq. So, too, unity by the negation of plurality, as from the beginning of our experience we are more familiar with the many than the one, *Metaφh.* 1054 a 20—29.

b 23. δεῖ δὲ δυνάμει εἶναι τὸ γνωρίζον, “but the apprehending mind must be potentially the contraries.” That is, if you are to know κακόν, you must have ἀγαθόν to know it. Cf. Simpl. 256, 33 τὸ σκοτός τῷ μὴ ὄραν τὸ φῶς [cf. 425 b 20—22], καὶ τὸ κακὸν τῷ μὴ ὄραν τὸ ἀγαθὸν ἐν αὐτῷ, ἐπεὶ τῇ τοῦ ἀγαθοῦ ἐννοίᾳ καὶ τῇ τοῦ φωτὸς καὶ τὸ κακὸν καὶ τὸ σκοτός γινώσκομεν, ὥς τῇ τοῦ κανόνος ὁρθότητι τὸ στρεβλόν (cf. 411 a 5 sq.).

b 24. ἐνεῖναι ἐν αὐτῷ. If we adopt this reading, the subject is τὸ δυνάμει ἐναντίον: “the potential contrary must be in it (the apprehending mind).” Biehl follows cod. L in writing ἐν εἶναι and omits the preposition ἐν before αὐτῷ. By ἐν must then be understood one of the two contraries, which Bywater's conjecture ἐναντίον εἶναι ἐν αὐτῷ more clearly expresses, though we might have expected ἐν τῶν ἐναντίων. Biehl's text is open to the objection that it would naturally be taken to mean “the knowing subject must be one and the same with it,” i.e. with the contrary. I may add that the reading καὶ ἐν εἶναι is by a slip attributed to cod. E in the Berlin Aristotle, whereas upon 430 a 23 Bekker had noted that a leaf of cod. E beginning there was missing.

b 24. εἰ δὲ τινι μὴ ἔστιν ἐναντίον. There can be no doubt that this is an allusion to the supreme cause, the πρῶτον κινοῦν ἀκίνητον of *Metaφh.* 1075 b 20 καὶ τοῖς μὲν ἄλλοις ἀνάγκη τῇ σοφίᾳ καὶ τῇ τιμωτάτῃ ἐπιστήμῃ εἶναι τι ἐναντίον, ἡμῖν δ' οὐ· οὐ γὰρ ἔστιν ἐναντίον τῷ πρώτῳ οὐδέν. As we know from *Metaφh.* Δ., cc. 6—10, this supreme cause thinks itself and is a being free from matter and necessarily free from contrariety. You know the ἐναντίον in virtue of the ἐναντίον in your own mind. The supreme cause has no contrary to it. Thus here there is nothing that helps us to understand the working of the human mind. Cf. Them. III, 35 H., 206, 2 Sp. τοιοῦτος δὲ ὁ τε ἔξωθεν καὶ πολλῷ μᾶλλον τὸ πρῶτον αἴτιον ὅσῳ καὶ μᾶλλον ἀπήλλακται τοῦ δυνάμει· διὰ τοῦτο γὰρ οὗτος καὶ τὸ μάλιστα ὄν καὶ τὸ μάλιστα εἶδος νοεῖ καὶ πορρωτάτω στερήσεως καὶ ἀμορφίας· τοιοῦτος δὲ αὐτός, εἰαυτὸν ἄρα νοεῖ, καὶ οὗτός ἐστιν οὗ τὴν οὐσίαν ἐνέργειαν λέγειν προσήκει καὶ ὄν ἀκριβῶς χωριστόν, οὐδὲ ἀκαρεῖ προσαρμοζόμενον τῷ δυνάμει.

b 25. [τῶν αἰτίων]. These words seem out of place, for we have been dealing with the knowing subject, τὸ γνωρίζον, and there seems to be no reason why at this point we should pass to consider the causes and principles of things. Moreover, the position of the words would seem to imply that τὸ γνωρίζον is itself an αἴτιον. By ἐναντίον must be meant the opposite, by becoming which a thing ceases to be what it is, in accordance with A.'s own explanation of becoming, γένεσις ἀπλῆ: see *Metaφh.* 1069 b 3—20. Such becoming is inexplicable without the assumption of ὕλη, and when all contrariety, contingency, matter and potentiality are excluded, there remains nothing but ἐνέργεια, which, according to A., takes the form of thought. In *Metaφh.* 1075 a 25—1076 a 5 the criticism of all preceding systems turns on their assumption of contraries for principles, and A. claims that not only τὸ πρῶτον κινοῦν, but also matter, in his own system has no contrary: *ib.* 1075 a 34 ἡ γὰρ ὕλη ἡ μία οὐδενὶ ἐναντίον. Form no doubt is

contrasted with, and antithetic to, matter, as (*Metaph.* 983 a 31 sq.) end to the moving cause, but not all ἀντικείμενα are ἐναντία. I therefore follow Zeller in bracketing τῶν αἰτίων, being content to take τινὶ as standing for τῶν γνωριζόντων τινί. Bywater, p. 60, supposes the words to have crept in from a marginal gloss.

b 26. ἔστι δ' ἡ μὲν φάσις τι κατὰ τινος. With τι κατὰ τινος supply κατηγορούμενον. Assertion is something said of something; that is, a predication of a certain attribute of a certain subject. A. here uses the term φάσις in the wider sense, in which it includes both κατάφασις, positive assertion or affirmation, and ἀπόφασις, negative assertion or negation. Sometimes, however, he uses it for κατάφασις only, as in *Metaph.* 1008 a 34 ἔτι εἰ ὅταν ἡ φάσις ἀληθὴς ᾖ, ἡ ἀπόφασις ψευδής, κἂν αὕτη ἀληθὴς ᾖ, ἡ κατάφασις ψευδής, οὐκ ἂν εἴη τὸ αὐτὸ ἅμα φάναι καὶ ἀποφάναι ἀληθῶς, *De Interpr.* 21 b 21 φάσεις καὶ ἀποφάσεις: also *Metaph.* 1012 a 4 ὅταν μὲν ὧδὶ συνθῇ φᾶσα ἡ ἀποφᾶσα, ἀληθεύει. Cf. 431 a 9 καταφᾶσα ἡ ἀποφᾶσα followed 431 a 16 by φήση ἡ ἀποφήση, 431 b 8 by ὅταν εἴπῃ, which last is like φάσις here. Cf. also Bonitz *ad Metaph.* Θ., c. 10, p. 410, *note*, cited *supra* in *note* on 430 a 3. As may be seen from *Soph.* 263 E sqq. cited p. 459 *supra*, Plato has opposed φάσις to ἀπόφασις as affirmation to negation. Neither κατάφασις nor καταφάναι appears in Plato's writings. The inconvenience of using the same term both in a generic and specific sense no doubt led to the adoption of κατάφασις for "affirmation."

b 27. ἀληθὴς ἡ ψευδὴς πᾶσα. Such assertion must in every case be either true or false. If we compare 430 a 27 sqq., it will appear that φάσις here, as used of predication, is more precisely the particular kind of σύνθεσις νοημάτων ὥσπερ ἐν ὄντων in which truth and falsehood reside. ὁ δὲ νοῦς οὐ πᾶς, int. ἀληθὴς ἡ ψευδὴς ἔστι. This simply repeats the opening words of the chapter, and our next clause proves that under ἀδιαίρετα there the τί ἦν εἶναι is included.

b 28. ὁ τοῦ τί ἐστι κατὰ τὸ τί ἦν εἶναι, int. νοῦς, which, however, must be used here to denote the mind when it thinks and therefore can differ hardly at all from νόησις. Cf. *Metaph.* 1075 a 3—5. The genitive τοῦ τί ἐστι is objective. For the relation of τί ἐστι, the generic notion or "What" of a thing, to τί ἦν εἶναι, its constitutive essence or quiddity, see *notes* on 412 b 11 and 402 a 12. The force of κατὰ seems to be restrictive, "as determined by," or "in conformity with, the quiddity." Cf. 404 b 5, *note*. ἀληθής, not liable to be false as well as true, as is the case with a predicate. A. expresses this by saying "is true and not a predication," something predicated of something. Cf. 428 a 17 τῶν αἰεὶ ἀληθευόντων...οἷον...νοῦς.

b 29. ἀλλ' ὥσπερ τὸ ὁρᾶν τοῦ ἰδίου ἀληθές. The objective genitive would be more natural if ἡ ὄψις had preceded, instead of τὸ ὁρᾶν. Cf. Philop. 557, 3 τί ἐστι τὸ ὁρᾶν τοῦ ἰδίου; ἀντὶ τοῦ ὁρᾶν τὸ ἴδιον καὶ ἰδιοπραγεῖν, οἷον τὸ ὁρᾶν τὸ λευκὸν καὶ μόνον, μηκέτι δὲ καὶ τὴν οὐσίαν ᾗτινι τὸ λευκὸν τοῦτο ὑπάρχει. Them. avoids the difficulty when he paraphrases 112, 16 H., 206, 25 Sp. ἡ ὄψις μόνον μὲν κρίνουσα τὸ λευκὸν κτέ. If it is not an objective genitive, it can hardly be regarded as partitive, but it might be a genitive of respect, to which Simpl. 262, 2 ἡ ὄψις...αἰεὶ τῶν ἰδίων ἀληθής, "true in respect of its proper objects," lends some support. But it must be pointed out that Simpl. has previously used expressions which imply an objective genitive: 261, 35 τῇ τῶν ἰδίων ὁρατῶν ὄψει and 261, 36 πᾶσαι τῶν ἰδίων ἀληθείς καὶ ἀπλῶν εἰσι γνώσεις.

b 30. οὕτως ἔχει ὅσα ἀνευ ὕλης: so it is with pure or immaterial concepts or quiddities. The mind either apprehends them or it does not. There we have true unities. This explains the remark 430 b 14 sq. about τὸ εἶδει ἀδιαίρετον and its instant apprehension by one indivisible mental act. When we are in posses-

sion of such a concept, there is no question of its truth. When, however, the mind comes to predicate one of these concepts, e.g. goodness, of a given subject, then error is possible: just as with objects of sense we may be mistaken in judging the white object to be Cleon.

## CHAPTER VII.

In this chapter A. is still dealing with the operation of thought. He now makes the transition from theoretical to practical intellect, frequently employing the analogy of sense-perception.

**431 a 1—20.** Actual knowledge is identical with the thing known. Although in the individual potential knowledge, i.e. the faculty of knowing, precedes actual knowledge, no such priority attaches to it absolutely. For all becoming implies some actual existence as its cause. Thus we find that it is the sensible object which raises the sense from potential to actual existence, a transition which, properly speaking, is no passive affection or qualitative change at all, but rather an activity: and if we do call it motion, of which qualitative change is a species, we put a different meaning on the term motion, motion being by the definition activity of what is incomplete, while activity in the absolute sense, activity of that which is complete, is something distinct from motion in the ordinary sense [§ 1]. Perceiving something by sense, then, corresponds to simply naming it in language or apprehending it in thought. So far there is neither affirmation nor negation. But desire of what is pleasant or aversion to what is painful, as it were, converts the simple assertion of sense that there is an object into an affirmation or negation respecting it. There is not one faculty of desire and another faculty of aversion, but to feel pleasure or pain is to energise with the sensitive mean upon good or bad, as such. And, when we thus energise, we feel actual desire or actual aversion, though logically the faculty of sense can be distinguished from that of desire or aversion [§ 2]. For the thinking soul mental images take the place of present sensations and its affirmative or negative judgment of good or bad is desire or aversion. Hence the soul never thinks without a mental image. Here the analogy holds with sense. In desire and aversion there is a single faculty of thought which affirms or denies, just as there is a single central faculty of sense to which impressions of the several special senses are referred [§ 3].

431 a 1 τὸ δ' αὐτὸ ἐστίν... 3 χρόνῳ. This passage seems as much in place here as in 430 a 19—21. Themistius, however, having paraphrased it there, omits it here. Philop. and Simpl. attest the repetition and try to account for it. What is more important is that Alex. Aphr. found the text in its present condition: cf. Philop. 558, 4 ἐνταῦθα δὲ γενόμενος Ἀλέξανδρος φησὶν ὅτι τετάρακται ὁ λόγος, εἴπερ καὶ ἄνω διέκρινε τὸν δυνάμει νοῦν ἀπὸ τοῦ ἐνεργείᾳ, καὶ νῦν δὲ τὸ αὐτὸ ποιεῖ. The suggestion that the passage is intrusive in either context should be scouted. In c. 5 it is absolutely necessary, and here the clause a 3 ἐστὶ γὰρ ἐξ ἐντελεχείᾳ ὄντος πάντα τὰ γιγνόμενα will not stand without it. Why should not A. repeat himself when in the present chapter he comes to deal with διάνοια πρακτικὴ and to contrast it with sense?

a 3. ἐστὶ γὰρ... τὰ γιγνόμενα. These words may be understood quite generally: cf. 417 a 17 sq. In *Metaph.* Z., cc. 7—9 becoming, whether in nature, in art or even in τοῖς ἀπὸ ταῦτομάτου (1032 a 13), is exhaustively discussed. Although A. there has other objects in view, the truth of this principle is

sufficiently established for the first of A.'s categories (οὐσία=τόδε τι), e.g. 1034 b 16 ἀλλ' ἴδιον τῆς οὐσίας ἐκ τούτων λαβεῖν ἔστιν ὅτι ἀνάγκη προϋπάρχειν ἐτέραν οὐσίαν ἐντελεχείᾳ οὖσαν ἢ ποιεῖ, οἷον ζῶον, εἰ γίγνεται ζῶον. Actual existence precedes becoming, is its logical *præius*: cf. *Metaph.* 1071 b 14—22. The efficient cause is always actually existent, though the material cause may be described as potentiality or even as non-existent: cf. *Metaph.* 1069 b 15—20. Again, in the sphere of becoming, there is a close correspondence between the producing cause and the effect produced. The cause is already that which the thing produced becomes: cf. *Metaph.* 1069 b 31 ὥστ' εἰ καὶ ἡ ὕλη μία, ἐκεῖνο ἐγένετο ἐνεργείᾳ δ' ἡ ὕλη ἦν δυνάμει, also 1049 b 24 αἰεὶ γὰρ ἐκ τοῦ δυνάμει ὄντος γίγνεται τὸ ἐνεργείᾳ δὲ ὑπὸ ἐνεργείᾳ ὄντος, οἷον ἄνθρωπος ἐξ ἀνθρώπου, μουσικὸς ὑπὸ μουσικοῦ, αἰεὶ κινουντός τινος πρώτου· τὸ δὲ κινουὺν ἐνεργείᾳ ἥδη ἐστίν, 1072 b 30—1073 a 3; see especially 1072 b 35 τὸ γὰρ σπέρμα ἐξ ἐτέρων ἐστὶ πρότερον τελείων, καὶ τὸ πρῶτον οὐ σπέρμα ἐστίν, ἀλλὰ τὸ τέλειον· οἷον πρότερον ἄνθρωπον ἂν φαίη τις εἶναι τοῦ σπέρματος, οὐ τὸν ἐκ τούτου γενόμενον, ἀλλ' ἕτερον ἐξ οὗ τὸ σπέρμα. The purpose of Aristotle in *Metaph.* Θ., c. 8 is to establish the priority of ἐνέργεια to δύναμις in the wider sense of δύναμις as πᾶσα ἀρχὴ κινητικὴ ἢ στατικὴ: cf. 1049 b 4 ἐπεὶ δὲ τὸ πρότερον διώρισται ποσαχῶς λέγεται, φανερόν ὅτι πρότερον ἐνέργεια δυνάμει ἐστίν, and 1049 b 10 πάσης δὴ τῆς τοιαύτης [int. δυνάμει] προτέρα ἐστίν ἡ ἐνέργεια καὶ λόγῳ καὶ τῇ οὐσίᾳ· χρόνῳ δ' ἔστι μὲν ὥς, ἔστι δ' ὥς οὕτως: i.e., as he goes on to explain 1049 b 18, τὸ τῷ εἶδει τὸ αὐτὸ ἐνεργοῦν πρότερον, ἀριθμῷ δ' οὐ. "Take a man now existing and now seeing, or corn now ripe in the field: these doubtless, before they came into their present condition, must have pre-existed in Potentiality; that is, there must have pre-existed a certain matter—seed or a something capable of vision—which at one time was not yet in a state of Actuality. But prior to this matter there must have existed other Actualities [of the same species] by which this matter was generated" (Grote's Paraphrase, vol. II., p. 363, 1st edition, p. 616, 2nd edition). Again, cf. *De Gen. An.* II. 1, 734 a 29 λόγος δὲ τούτου, ὅτι ὑπὸ τοῦ ἐντελεχείᾳ ὄντος τὸ δυνάμει δὲ γίγνεται ἐν τοῖς φύσει ἢ τέχνῃ γινόμενοις, ὥστε δέοι ἂν τὸ εἶδος καὶ τὴν μορφήν ἐν ἐκείνῳ εἶναι.

a 4 φαίνεται δὲ τὸ μὲν αἰσθητὸν...5 ἐνεργείᾳ ποιοῦν, i.e. ἐνεργείᾳ αἰσθητικὸν ποιοῦν. We find the general rule that all which comes into being is derived from something actually existent confirmed in the case of the several senses, as was explained 418 a 3—6, also 417 b 20 τοῦ μὲν τὰ ποιητικὰ τῆς ἐνεργείας ἐξῶθεν, τὸ ὁρατὸν καὶ τὸ ἀκουστόν, 417 b 3 "sometimes it [τὸ πάσχειν] is rather a preservation of what is potentially existent by what is actually existent and like it, so far as likeness holds as between potentiality and actuality," 417 b 16 "the sensitive subject...once generated possesses sensation exactly in the same sense as we possess knowledge. And to have actual sensation corresponds to exercise of knowledge," of which latter it is said 417 b 6 sq. ἡ οὐκ ἔστιν ἀλλοιοῦσθαι ἢ ἕτερον γένος ἀλλοιώσεως, and again 417 b 13 ἥτοι οὐδὲ πάσχειν φατέον ἢ δύο τρόπους εἶναι ἀλλοιώσεως, 425 b 28 "It is possible to have hearing and yet not hear; again, that which is resonant is not always sounding. But when that which is capable of hearing actually hears and that which is capable of sounding sounds, the actual hearing and the actual sound occur simultaneously." Cf. also *Metaph.* 1010 b 35 οὐ γὰρ δὴ ἡ γ' αἰσθησις αὐτῇ ἐαυτῆς ἐστίν, ἀλλ' ἔστι τι καὶ ἕτερον παρὰ τὴν αἰσθησιν, δ' ἀνάγκη πρότερον εἶναι τῆς αἰσθήσεως· τὸ γὰρ κινουὺν τοῦ κινουμένου φύσει πρότερόν ἐστι. κἂν εἰ λέγεται πρὸς ἄλλα ταῦτα, οὐδὲν ἤττον.

a 6. διὸ ἄλλο εἶδος τοῦτο κινήσεως. As mentioned in *note* on 417 b 6, Alex. Aphr. proposed to call this a sort of γένεσις (γίγνεσθαι πᾶς). Philop. 558, 31 calls it simply μεταβολή, following 417 b 14—16. Cf. *Eth. Nic.* 1174 b 12 οὐδὲ

γὰρ ὁράσεώς ἐστι γένεσις οὐδὲ στιγμής οὐδὲ μονάδος, οὐδὲ τούτων οὐδὲν κίνησις οὐδὲ γένεσις· οὐδὲ δὴ ἡδονῆς· ὅλον γὰρ τι, also 1174 a 13—17.

a 7. ἡ δ' ἀπλῶς ἐνέργεια, "activity in the absolute sense." The test is that we can say ἄμα νοεῖ καὶ νενόηκεν, ἄμα ὁρᾷ καὶ ἐώρακεν, but no γένεσις or κίνησις proper is in this sense instantaneous. See *note* on 417 a 16. Cf. *Simpl.* 265, 13 ἢ ἄνεν τοῦ ἀτελοῦς οὕσα ἐνέργεια. Moreover, γένεσις or κίνησις is always for the sake of some end and ceases when this end is achieved, whereas the activity is for its own sake and instantaneously attains its end. Even if it has duration in time, like εὖ ζῆν, εὐδαιμονία, ἡδονή, it is complete (ὅλον τι) and perfect in every instant of such duration. Cf. generally *Eth. Nic.* 1174 a 13—1175 a 21, *Metaph.* 1048 b 18—35, 1050 a 23—b 2. ἡ τοῦ τετελεσμένου, when that which functions, ἐνεργεῖ, has attained its full development and perfection. *Them.* (112, 31 sq. H., 207, 14 sqq. Sp.) illustrates by the exercise and application of the ἐπιστήμων. He has completely formed the habit, and his exercise of it is complete. We are here thinking of the distinction between the continued process (κίνησις) and the result (ἐνέργεια) as compared in *Eth. Nic.* 1174 a 19 sqq. Of the former, κίνησις, *Them.* says: 112, 33 H., 207, 17 Sp. γενέσει μᾶλλον προσέοικεν ἢ τελειώσει.

a 8. τὸ μὲν οὖν αἰσθάνεσθαι. The transition from θεωρητικὸς to πρακτικὸς νοῦς, according to *Simpl.* (263, 37) and *Philop.* (558, 11), begins in the last section 431 a 4 φαίνεται κτέ. As in III., c. 4 A. made sense the starting-point for νοῦς θεωρητικὸς, so here again he makes sense the starting-point for νοῦς πρακτικὸς. This is to start with what is better known to us: experience shows that in whatever forms of life sensation is found, appetite goes with it. As *Philop.* brusquely says, 559, 7 δέον εἰπεῖν ὅτι ὁ πρακτικὸς νοῦς μετ' ὁρέξεως ἐνεργεῖ, εἶπεν αὐτὸς ὅτι μετ' αἰσθήσεως [int. ἐνεργεῖ], because it has been proved that ὁρεξις and αἰσθησις are τῷ ὑποκειμένῳ identical. See *note* on 414 b 1. In fact, the link between αἰσθησις (= ὁρεξις) and νοῦς πρακτικὸς is logical enunciation (φάναι). Perception in this connexion may be compared to simple naming of the subject and simple apprehension by the mind, *Metaph.* 1051 b 23 sqq. cited in next *note*. The passage 431 a 8—20 merely expands what has been implicitly stated 426 b 21 λέγει ἄρα τὸ αὐτό. ὥστε ὡς λέγει, οὕτω καὶ νοεῖ καὶ αἰσθάνεται, viz. unity of the judging faculty, whether in sense or thought. Cf. 432 a 16 τῷ τε κριτικῷ, δὲ διανοίας ἔργον ἐστὶ καὶ αἰσθήσεως. But the work of διάνοια, not fully explained 431 a 13—16, comes out more clearly when we reach 431 b 2 sqq.

a 8. τῷ φάναι μόνον καὶ νοεῖν. As just explained, φάναι, like λέγει 426 b 21, is the simple naming of a thing. Sense in apprehending its appropriate qualities is hardly ever mistaken (427 b 11 sq., 428 b 18 sq., 430 b 29) and the same is true of νοῦς, so far as it is concerned with ἀδιαίρετα: 430 a 26 περὶ δ' οὐκ ἔστι τὸ ψεῦδος. Cf. *Metaph.* 1051 b 23 ἀλλ' ἔστι τὸ μὲν ἀληθές [ἢ ψεῦδος, τὸ μὲν] θιγεῖν καὶ φάναι [ἀληθές] (οὐ γὰρ ταῦτ' ἀτάφαις καὶ φάσις), τὸ δ' ἄγνωσιν μὴ θιγγάνειν. The implicit judgment of sense in cases of this kind is not so much "this is yellow," "that is green," τὸ κατὰ τινος, as "it is yellow," "it is green"; or "this sensation is a sensation of yellow or of green."

a 9. ὅταν δὲ ἡδὺ ἢ λυπηρόν, int. ἡ τὸ αἰσθητόν (Torst.). To keep the subject, viz. ἡ αἰσθησις, the same in the dependent as in the principal clause, ὅν τι αἰσθάνηται might equally well be supplied. οἷον καταφάσα ἢ ἀποφάσα. The feminine participles show that ἡ αἰσθησις must be understood. By οἷον the analogy between sense and judgment, as well as their essential difference, is brought out. Sense does not really perform a synthesis such as was assigned to thought in 430 a 27—b 4. What it does is to pursue or shun. But therein is implied an inchoate synthesis, viz. of τὸ αἰσθητόν and τὸ ἡδὺ or of τὸ αἰσθητόν and τὸ λυπηρόν, an implicit judgment asserting that the sensible causes pleasure,

i.e. is relatively good, or that the sensible causes pain, i.e. is relatively evil. In short, pursuit or avoidance in the region of sense corresponds to a logical judgment of affirmation or denial, as is laid down *Eth. Nic.* 1139 a 21 ἔστι δ' ὁπερ ἐν διανοίᾳ κατάφασις καὶ ἀπόφασις, τοῦτ' ἐν ὁρέξει διώξις καὶ φυγή· ὥστ'...δεῖ... τὸν τε λόγον ἀληθῆ εἶναι καὶ τὴν ὁρεξὶν ὀρθήν,...καὶ τὰ αὐτὰ τὸν μὲν φάναι τὴν δὲ διώκειν. Cf. 414 b 4 sq., Simpl. 265, 35 ἐπειδὴ ἐν συμπλοκῇ πως καὶ ἡ τοιαύτη συνίσταται κρίσις τοῦ αἰσθητοῦ καὶ ὡς γνωστοῦ καὶ ὡς ἡδέος· διὰ γὰρ τοῦτο οἷον κατάφασις. τὸ δὲ οἷον, ἐπειδὴ κυρίως ἐν λογικῇ ἀνελίζει ἢ τε κατάφασις καὶ ἡ ἀπόφασις...266, 3 τὸ μὲν ἡδὺ διώκει ἡ αἴσθησις ὡς ἀγαθόν, τὸ δὲ λυπηρόν ὡς κακὸν φεύγει ἡ αἴσθησις· λογικῆς γὰρ διακρίσεως τὸ ἀγαθὸν ἀπὸ τοῦ ἡδέος διορίζει πολ- λάκις, τὸ δὲ κακὸν ἀπὸ τοῦ λυπηροῦ. Sense takes what is pleasurable at the moment for what is so absolutely and for absolute good, 433 b 8—10.

a 10 καὶ ἔστι τὸ ἡδυσθαί...11 ἢ τοιαῦτα. A. is obviously affecting a technical phraseology which I have tried to reproduce in my translation. The same conclusion as before is now put without the analogy of speech and thought, which, as always in A., go together. Cf. Simpl. 266, 12 διὰ γὰρ τὸ τὸ αἰσθητικὸν σωματικῶ ὀργάνῳ πάντως χρῆσθαι τὰ ἐκείνου σωτήρια ἢ φθαρτικά πάθῃ γινώσκει τε καὶ ὡς οἰκεία ἢ ἀλλότρια τὰ μὲν ἀγαπᾷ τὰ δὲ φεύγει, where the language seems coloured with the associations of the later schools. A. "defines pleasure and pain," says Grant, *Ethics* I<sup>3</sup>, p. 256, "to consist in the 'consciousness, by means of the discriminating faculty of the senses, of coming into contact with good or evil.'" This is in accordance with Grant's conviction that occasionally the modern term "consciousness" is best fitted to express the deeper signification of ἐνεργεῖν. Cf. Simpl. 266, 5 δηλοῖ δὴ ἡ διώξις τὴν οἷον ἀγάπησιν καὶ μεταδίωξιν, ἡ δὲ φυγή τὴν ἀποστροφὴν καὶ ἀπόστασιν. καὶ ἐν μὲν τῷ ἡδυσθαί ἡ αἴσθησις ὡς ἀγαθοῦ ἀντέχεται τῆς οἰκείας ἐνεργείας, ἐν δὲ τῷ λυπεῖσθαι ὡς κακῇ ἀναίνομαι. The words of the text recall *Eth. Nic.* 1174 b 14 sqq., the well-known passage beginning αἰσθήσεως δὲ πάσης πρὸς τὸ αἰσθητὸν ἐνεργοῦσης, in which A., who consistently maintained that pleasure was akin to ἐνέργεια as distinct from κίνησις, expounds his theory that pleasure is the concomitant of normal activities and attends upon the functions of every faculty of sense or thought, though the highest pleasure is only experienced when the faculty, being perfect, works upon a perfect object: 1174 b 18 καθ' ἐκάστην δὴ βελτίστη ἔστιν ἡ ἐνέργεια τοῦ ἀριστα διακειμένου πρὸς τὸ κράτιστον τῶν ὑφ' αὐτήν. In τῇ αἰσθητικῇ μεσότητι we get a reminder of the unity of sense: cf. *infrā* 431 a 19. We have been told before (424 a 4 sqq.) that sense is a sort of mean between the opposite sensibles and that it is in virtue of this that sense pronounces on its object, since the mean pronounces on the extremes, becoming to each of them the opposite extreme; from which the dictum "excellens sensibile corrumpit sensum," 424 a 28 sqq., is simply a corollary. ἢ τοιαῦτα. Philoponus rightly explains these words: 559, 10 καλῶς πρόσκειται τὸ ἢ τοιαῦτα· οὐδὲ γὰρ αὐτὰ καθ' ἑαυτὰ ἀγαθὰ ἔστιν ἡ κακὰ, ἀλλ' ὡς πρὸς τὸ ζῆον, ὡς τὸ μὲν σῶζον λέγεσθαι ἀγαθόν, τὸ δὲ φθεῖρον λέγεσθαι κακόν: cf. 433 a 28, b 8—10. Simpl. appears to have read ἢ τὰ τοιαῦτα: 266, 15 τὸ δὲ ἢ τὰ τοιαῦτα πρόσκειται τῷ ἀγαθῷ ἢ κακῷ, διότι οὐδέποτε ἡ αἴσθησις τὸ ἀγαθὸν ὡς ἀγαθόν ἢ τὸ κακὸν ὡς κακὸν κρίνει, ἢ τὸ μὲν διώκει τὸ δὲ φεύγει, ἀλλὰ τὸ ἡδὺ ὡς ἀγαθόν καὶ τὸ λυπηρόν ὡς κακὸν τὸ μὲν διώκει τὸ δὲ φεύγει.

a 12. καὶ ἡ φυγή...ἢ κατ' ἐνέργειαν. The qualification ἡ κατ' ἐνέργειαν must be supplied with ἡ φυγή. It may be objected to ταυτό, the reading of codd. LTV adopted by Biehl, that it makes the text unnecessarily paradoxical: "actual aversion and actual desire, and not merely the faculties in question, are identical," though the paradox must of course be qualified by the customary

ἀλλὰ τὸ εἶναι ἄλλο. We had better acquiesce in τοῦτο (=τὸ ἐνεργεῖν), read by Bek. Trendl. and Torst. Torstrik proposed conjecturally τὸ αὐτὸ τοῦτο here and would bracket ἡ κακὸν in the preceding line, where cod. L reads ἡ τοιοῦτο in place of ἡ τοιαῦτα. Then τὸ αὐτὸ τοῦτο, like τοῦτο, =τὸ ἐνεργεῖν τῇ αἰσθητικῇ μεσότητι. There seems no need to change ἡ before κατ' ἐνέργειαν with Trendl. to ἡ in order to bring out an antithesis between ἡ τοιαῦτα and ἡ κατ' ἐνέργειαν: quatenus res in universum vel bonae vel malae sunt (ἡ τοιαῦτα, quod genus significat) animus vel gaudet vel dolet; quatenus in nos ipsos agunt (ἡ κατ' ἐνέργειαν), vel concupiscimus vel fugimus (p. 425).

a 13 καὶ οὐχ ἕτερον...14 ἀλλὰ τὸ εἶναι ἄλλο, i.e. we do not desire the pleasant by one faculty and shun the painful by another. There is only one faculty of aversion and appetite, and this is identical with the sensitive faculty, though logically distinct. The same qualification has already been used for the identity of sense-organ and faculty 424 a 25, of actual sensation and actual sensible 425 b 27. Sensation and appetite ought no more to be confused than sensation and pleasure: cf. *Et h. Nic.* 1175 b 34 οὐ μὴν ἔοικέ γε ἡ ἡδονὴ διάνοια εἶναι οὐδ' αἰσθησις (ἄποπον γάρ), ἀλλὰ διὰ τὸ μὴ χωρίζεσθαι φαίνεται τισι ταυτὸν.

a 14 τῇ δὲ διανοητικῇ ψυχῇ...15 ὑπάρχει. This is repeated 432 a 9, with the significant addition πλὴν ἄνευ ὕλης. In 429 a 4 sq. we learned that imaginations persist and resemble sensations, διὰ τὸ ἐμμένειν (int. τὰς φαντασίας) καὶ ὁμοίαις εἶναι ταῖς αἰσθήσεσι. The stone is outside me: when I perceive it, its εἶδος αἰσθητὸν is "in" my sensitive soul, but the change (κίνησις), which I call perception, has set up in me a distinct change, resulting in an image which, if certain circumstances are fulfilled, persists or is recalled, and then I am said not to perceive, but to think the stone (εἶδος νοητὸν): and the presentation of an image is just as indispensable if the object of thought is not a particular but an universal. The case of the universal is referred to 417 b 22—25 and more fully investigated *Anal. Post.* II. 19, 100 a 15—b 3. See *De Mem.* I, 450 a 1—7. The part taken by images in memory is explained in *De Mem.*, c. 1, the twofold function of the image as a mere thought and as recalling a former perception is explained there 451 a 1 ἐν τε τῇ ψυχῇ τὸ μὲν γίγνεται ὥσπερ νόημα μόνον, τὸ δ' ὡς ἐκεῖ ὅτι εἰκὼν, μνημόνευμα. The necessity of the mental image of a triangle in mathematical reasoning is enforced in the same chapter 449 b 31 καὶ νοεῖν οὐκ ἔστιν ἄνευ φαντάσματος· συμβαίνει γὰρ τὸ αὐτὸ πάθος ἐν τῷ νοεῖν ὅπερ καὶ ἐν τῷ διαγράφειν· ἐκεῖ τε γὰρ οὐθὲν προσχρῶμενοι τῷ τὸ ποσὸν ὀρισμένον εἶναι τοῦ τριγώνου, ὅμως γράφομεν ὀρισμένον κατὰ τὸ ποσόν· καὶ ὁ νοῶν ὡσαύτως, κὰν μὴ ποσὸν νοῇ, τίθεται πρὸ ὁμμάτων ποσόν, νοεῖ δ' οὐχ ἡ ποσόν· ἂν δ' ἡ φύσις ἡ τῶν ποσῶν, ὁρίστων δέ, τίθεται μὲν ποσὸν ὀρισμένον, νοεῖ δ' ἡ ποσὸν μόνον. οἶον αἰσθήματα. Cf. *Them.* 113, 14 H., 208, 13 Sp. πρόκειται ὥσπερ καὶ τὰ αἰσθήματα τῇ αἰσθήσει. In *Metaφh.* 1010 b 32 sq. αἰσθημα is said to be τοῦ αἰσθανομένου πάθος. See *note* on 417 b 20.

a 15 ὅταν δὲ ἀγαθὸν...16 διώκει. The subject of the verbs φήσῃ, διώκει is probably ἡ διανοητικὴ ψυχὴ or τὸ διανοητικόν. With ἀγαθὸν ἡ κακὸν we must understand φαντασθὲν as contrasted with the ἡδὺ ἡ λυπηρὸν of a 9 *supra*, which is αἰσθητὸν. Pursuit or avoidance, i.e. desire or aversion, comes within the sphere of νοῦς πρακτικὸς only in so far as the pursuit or avoidance can be resolved into affirmation or negation. Strictly all that a thinking faculty can do is to command (κελεύειν, ἐπιτάττειν, λέγειν 432 b 30 sqq.), i.e. to determine either an end or means to an end. The process indicated seems to be that of combining or separating, conjoining or dissociating the ideas of good and evil from some object present to the mind. So *Them.* 113, 16 H., 208, 15 Sp. ὅταν οὖν αὐτὰ συμπλέξῃ οἶον τὸ φάντασμα καὶ τὸ ἀγαθόν, ἢ τὸ φάντασμα καὶ τὸ κακόν,

τότε φεύγει ἢ διώκει καὶ ἔοικε καταφάσει ἢ διώξει, ἀποφάσει δὲ ἡ φυγή. It must be remembered, however, that *φαντασία* may lead to action either on its own account, 429 a 5 sqq., or as an indispensable condition of the activity of the νοῦς πρακτικός.

a 16 διὸ οὐδέποτε...17 ἡ ψυχὴ. Because the thinking soul, being incapable of perception, has no sensations before it, it must have images to serve instead of sensations. That the image or pictorial presentation is indispensable to thought is often affirmed, e.g. 432 a 8, 13 sq. and, making allowance for the tentative tone of an introductory chapter, 403 a 8 εἰ δ' ἐστὶ καὶ τοῦτο [int. τὸ νοεῖν] φαντασία τις ἢ μὴ ἄνευ φαντασίας, *De Mem.* 1, 449 b 31.

a 17 ὥσπερ δι...20 πλείω. There is apparently no apodosis, the effect of ὥσπερ extending to the last co-ordinate sentence a 19 τὸ δ' ἔσχατον [int. ἐστὶν] ἐν κτέ. Cf. *Ind. Ar.* 872 b 29 mittitur etiam interdum ea enunciatio demonstrativa, ad quam membrum relativum a part ὥσπερ incipiens referatur. See also 417 a 7 καθάπερ, 403 a 12, 409 a 32, *De Sensu* 3, 439 a 18 sqq. The communication of motion in sensation, for which cf. *De Insomn.* 2, 459 a 28—b 5, is traced from the air to the sense-organ and thence to some internal part, but the last point which this motion reaches is the organ of the central sense in or near the heart. It is true that, except for 426 b 15 sq., no mention was made of this organ in III., c. 2: but, having established the existence of the faculty, A. takes for granted τὸ μόριον ἐν ᾧ ἐστὶ (to which repeated reference is made in the *Parva Naturalia*) on the principle laid down 424 a 24—28. This organ may be styled μεσότης (cf. a 11 *supra*) on the same grounds as any special sense-organ: cf. 424 a 4 sqq. and see note on 431 a 10. The connexion of thought is not obvious, but the wording of 431 b 2 τὰ μὲν οὖν εἶδη κτέ. suggests a fresh start after a digression; and this makes against all proposals by means of transposition to bring a 14 τῇ δὲ...17 ψυχὴ into close juxtaposition with b 2 sqq. *infra*. If the point of comparison is unity in diversity, a 19, 28 sq., we should expect the parallel between images and sensibles to be more fully elaborated, whereas in 431 a 20—b 1 we seem still to be dealing with sensibles.

431 a 20—b 19. Here we must recall the explanation previously given (426 b 8 sqq.) of the operation by which judgment is passed upon a plurality of sensibles simultaneously presented. The judging faculty is one, ἐν τῇ, and one in the same sense as a point is one, i.e. its unity is not incompatible with a plurality of relations. The single judging faculty deals with heterogeneous sensibles, sweet and white, precisely as it deals with opposite sensibles, e.g. black and white, belonging to the same genus colour [§ 4]. To return to the thinking soul, which thinks the forms of objects as implicated in mental images: as the object of pursuit or avoidance is therein defined for it, so, when it is outside the range of sensation and dealing with mental images, we are thereby moved to action. Thus the mental picture of something to be avoided or pursued in its effect on the thinking soul may be compared with the beacon light in motion, the conventional signal of the enemy's approach [§ 5]. As the eye sees the one, so the mind sees the other, and the man is roused to calculate and deliberate, weighing the future against the present, and pursuit or avoidance follows upon the pronouncement of thought precisely as it does upon the pronouncement of sense that an object is pleasant or painful: and so in general where action is concerned. [But the intellect is not wholly practical.] Truth and falsehood, the object of the speculative intellect, are generically one with good and evil, the object of the practical intellect; but, while truth and falsehood have an absolute validity, good and evil are always good or evil for some person or some thing [§ 6]. Such abstractions as form the objects



of mathematics the mind thinks precisely as it might think the camused as concave in contradistinction to the camused as such, i.e. without separation from the substratum in which it is found. Though mathematical objects are not really separate from things, the mind conceives them as if they were [§ 7]. In fine, the mind, when it thinks, is actually the things which it thinks. The question whether the mind can think anything that is immaterial and unextended without being itself immaterial and unextended must for the present be postponed.

431 a 20. *τίνι δ' ἐπικρίνει.* The subject is left vague: it must be *τὸ ἐπικρίνων*, whether *ὁ ἄνθρωπος* or *ἡ ψυχὴ*. A comparison of the statement of the same problem 426 b 14 (*κρίνομεν, αἰσθανόμεθα*) favours the former view. In any case, by *τίνι* and a 21 *ἐν τι* we are to understand what is technically known as *ἡ κοινὴ αἴσθησις* or (*De Sensu* 7, 449 a 17) *τὸ αἰσθητικὸν πάντων*.

a 21. *πρότερον*, viz. 426 b 12—427 a 14. *ὧδε*, “as follows.” Nothing is added to the explanation before given, nor is it easy to see why it should be summarised here. Hence it is not strange that Them. in his paraphrase should have entirely passed over 431 a 17—b 1, or that Torstrik should have included the same passage in the *loci insiticii* which, according to him, interrupt the course of the argument. Neuhaeuser, however (*Aristoteles' Lehre*, p. 52), translates *ὧδε* “in einer andern Weise.” If it be urged that in this passage stress is laid on the unity of the object, we may reply that throughout III., c. 2 a single faculty implies a single act of perception, and a single act of perception implies a single object. *ἔστι γὰρ ἐν τι.* Cf. 426 b 18 *δεῖ ἐνί τινι ἁμῶς* [int. *τὰ κρίνομενα αἰσθητὰ*] *δῆλα εἶναι*, 426 b 20, 21 *λέγει ἄρα τὸ αὐτό*, b 22 *οὐχ οἶόν τε κεχωρισμένοις κρίνειν τὰ κεχωρισμένα*, b 30 *τὸ αὐτὸ ἢ ἀδιαίρετον*, 427 a 2 *ἀριθμῶ ἀδιαίρετον καὶ ἀχώριστον*, 427 a 11.

a 22. *οὕτω δὲ καὶ ὡς ὅρος.* Our authorities vary very considerably: see critical notes. Codd. LV omit *καὶ ὡς ὅρος* and give a shortened text *οὕτω δὲ καὶ ταῦτα ἐν τῷ ἀνάλογον κτέ.*, but the words of Simpl. (271, 6) *ἔστι γὰρ, φησι καὶ αὐτός, ἐν τι αὐτὸ τὸ κρίνουν ὥσπερ καὶ ὁ ὅρος* and Philop. (560, 21) *μία οὖσα, φησίν, ὥσπερ ὅρος* are conclusive against the omission. Cod. T, on the other hand, has *οὕτω δὲ ἡ στιγμὴ καὶ ὁ ὅρος*, which led Torstrik to conjecture that our text is defective rather than redundant here. It need not surprise us that what is successively called *στιγμὴ*, *σημεῖον*, *πέρας* in III., c. 2 should here be designated *ὅρος*. It might even have been called *διαίρεσις*, 430 b 20. Such a boundary point implies at least two things which it separates.

a 22 καὶ ταῦτα...23 πρὸς ἄλληλα. All attempts to make anything of the traditional text *τῷ ἀριθμῷ ὃν ἔχει* having been fruitless (see Neuhaeuser, p. 53 sqq.), a new chapter in the interpretation of this obscure passage opened with the adoption by Freudenthal and Neuhaeuser of the reading *ὃν* for *δν* on the authority of Simplicius and the old Latin Translation. If it were certain that the subject of a 23 *ἔχει* must be what is known as *ἡ κοινὴ αἴσθησις*, such a result could be more easily reached by extruding *ὃν* or *δν* altogether from the text, or by transposing a 22 καὶ ταῦτα...23 τῷ ἀριθμῷ to precede a 22 οὕτω δέ. In the latter case we should get *ἔστι γὰρ ἐν τι· καὶ ταῦτα* [int. *τὸ γλυκὺ καὶ τὸ θερμὸν*] *ἐν τῷ ἀνάλογον ἢ τῷ ἀριθμῷ· οὕτω δὲ καὶ ὡς ὅρος ὃν ἔχει πρὸς ἑκάτερον ὡς ἐκεῖνα πρὸς ἄλληλα*, a statement so plain that confusion or perplexity would seem impossible. The attitude of the central sense to two heterogeneous sensibles which it discriminates would then be declared to be the same as the attitude of every special sense to the *ἐναντία* which come under its ken, as laid down 424 a 6 *γίνεται γὰρ πρὸς ἑκάτερον αὐτῶν θάτερον τῶν ἄκρων*: and this would accord perfectly with the next sentence in which white and black emerge. Or, if *δν* be

deleted, the transposition is unnecessary, provided that a 22 καὶ ταῦτα...23 τῷ ἀριθμῷ is treated as parenthetical and enclosed in round brackets. If, however, we decline to evade the difficulties before us, it certainly seems to me that ταῦτα must be the nominative to ἔχει πρὸς ἑκάτερον, that it is a mistake to supply a second ἑκάτερον before πρὸς ἑκάτερον to balance ἐκεῖνα πρὸς ἀλλήλα, and that a 22 ἐν τῷ ἀνάλογον...a 23 ὃν is an attributive clause, in which ὃν has been substituted for ὅντα through the influence of the predicate εἶν. Attraction to the gender of the predicate is common, to the number rare, but there are instances, e.g. 422 b 19 πότερον πλείους εἰσὶν ἢ μία. Here ἡ ἀφή must be the subject and εἰσὶν is attracted to the number of πλείους. Cf. *Metaφh.* 1048 a 8 αῖται μὲν γὰρ πᾶσαι μία ἐνὸς ποιητικῆ, ...ᾧστε ποιήσει, *De Sensu* 7, 447 b 26 τὸ λευκὸν καὶ τὸ μέλαν, ἔτερον τῷ εἶδει ὃν, Plato, *Protag.* 340 A ἡ τὸ τέ βούλεσθαι καὶ ἐπιθυμεῖν διαιρεῖς ὥς οὐ ταῦτόν ὃν, καὶ ἃ νῦν δὴ εἶπες πολλὰ τε καὶ καλὰ. For attractions of gender cf. 404 a 25 sq., 419 b 10 πλὴγὴ γάρ ἐστιν ἡ ποιοῦσα. A better instance is *Metaφh.* 1002 a 2 τὸ δὲ σῶμα...μόνον ὑπομένει, ὥς ὃν τι καὶ οὐσία τις οὔσα. Thus understood, the sentence affirms, not that the central sense is a μεσότης, related to each of its heterogeneous objects as these heterogeneous objects are related to each other, but that this proposition holds of the object of the central sense, viz. the two heterogeneous sensibles when they have coalesced into unity of one sort or another. It means then that the single object (ταῦτα) formed by the unity of the two sensibles stands related to each sensible in turn (πρὸς ἑκάτερον) as these sensibles in isolation (ἐκεῖνα) stand to one another. I have adopted the reading ἡ τῷ ἀριθμῷ because I take it that the type of unity differs according as the qualities compared are in the same or in different objects. If they are in different objects, the only unity they can have is the unity of analogy, because sweet is the positive extreme of the genus flavour, as hot is the positive extreme of the genus temperature. When things are so related that as  $A : B :: C : D$ ,  $A$  and  $C$  are said to be by proportion or analogy one, and similarly  $B$  and  $D$  are by proportion or analogy one: there is an identity of relation: cf. *Eth. Nic.* 1131 a 31 ἡ γὰρ ἀναλογία ἰσότης ἐστὶ λόγων, *Metaφh.* 1016 b 34 κατ' ἀναλογίαν δὲ [int. ἐν] ὅσα ἔχει ὥς ἄλλο πρὸς ἄλλο with Alex. Aphr. *ad loc.* 369, 24 ἀναλογία μὲν γὰρ εἶν, ὥς πηγὴ πρὸς ποταμόν, οὕτω καρδία πρὸς τὸ ζῆλον· οὐ μὴν καὶ ὁμογενῇ ταῦτα, πηγὴ καὶ καρδία ἢ ποταμὸς καὶ ζῆλον. Cf. *Poet.* 1457 b 16 τὸ δὲ ἀνάλογον λέγω, ὅταν ὁμοίως ἔχη τὸ δεύτερον πρὸς τὸ πρῶτον καὶ τὸ τέταρτον πρὸς τὸ τρίτον· ἐρεῖ γὰρ ἀντὶ τοῦ δευτέρου τὸ τέταρτον ἢ ἀντὶ τοῦ τετάρτου τὸ δεύτερον, which Butcher translates: "Analogy or proportion is when the second term is to the first as the fourth to the third. We may then use the fourth for the second, or the second for the fourth." Here it is plain that the second and fourth are by analogy or proportion one and similarly the first term and the third are by analogy or proportion one. If the two qualities belong to the same external thing, they will be κατὰ συμβεβηκός numerically one, exactly as "musical" and "just" are numerically one because they happen to be qualities of Coriscus: *Metaφh.* 1015 b 16—36. (I may add that the MS. authority for καὶ in place of ἡ before τῷ ἀριθμῷ is cod. T only, not, as reported by Hayduck, *crit. app.* ad Philop. 560, 23, codd. E T. From 430 a 24 to 431 b 16 we are without the testimony of cod. E.) In the result so obtained there is nothing, I believe, to conflict with the teaching of the treatise. We have been told that ψόφησις=ἄκουσις and that both reside ἐν τῷ πάσχοντι, i.e. ἐν τῷ αἰσθητικῷ, and what has been established for each and all of the five senses must hold of the single faculty, τὸ αἰσθητικὸν πάντων, in which they are all merged. In the act of perception, then, the central sense and its object, which is a pair of heterogeneous sensibles, are one and the same, though

logically distinct. Moreover, our sentence itself proves (1) that the object, the pair of heterogeneous sensibles, is under the given conditions a unity, (2) that the object is related in one way to one, in another way to the other of the two heterogeneous sensibles of which it consists. That is, sweet-hot is sweet as compared with hot and hot as compared with sweet, so that we have here that plurality of relations which makes the same piece of road diverse, because it can be regarded now as uphill, now as downhill. As to (1), the fact that the pair of heterogeneous sensibles is under the given conditions a unity seems to be confirmed by *De Sensu* 7, 449 a 5 *εἰ δὲ δὴ ἄλλω μὲν γλυκερός ἄλλω δὲ λευκοῦ αἰσθάνεται ἡ ψυχὴ μέρος, ἥτοι τὸ ἐκ τούτων ἔν τι ἐστὶν ἢ οὐχ ἔν. ἀλλ' ἀνάγκη ἔν· ἐν γάρ τι τὸ αἰσθητικόν ἐστι μέρος. τίνος οὖν ἐκεῖνο ἐνός; οὐδὲν γὰρ ἐκ τούτων ἔν.* A. desiderates unity in the object, but is unable to find it, presumably because sweet and white do not coalesce in the same way into a *μείγμα*, as e.g. the two notes blended in an octave, which, according to *De Sensu* 7, 447 a 17 sqq., b 9—13, are simultaneously perceived by the ear because they have coalesced into unity. Yet the conclusion of *De Sensu* is not incompatible with the interpretation I propose of our present passage, since in 449 a 5 sqq. the denial of unity applies only to the hypothesis there under consideration, viz. the simultaneous apprehension of sweet by one part, and white by another part, of the soul, an hypothesis which A. is there refuting, as he again refutes it *De A.* 426 b 17. Even in *De Sensu* 447 b 1 an accidental unity of heterogeneous sensibles is conceded: *οὐκ ἔστι δ' ἐκ λευκοῦ καὶ ὀξέος ἐν γενέσθαι ἀλλ' ἢ κατὰ συμβεβηκός.* This I take to be the meaning of *ἡ τῷ ἀριθμῷ* [int. ἔν], 431 a 22.

Neuhaeuser explains *ταῦτα* as the sensations, *ἐκεῖνα* as the objective qualities outside of sensation. He is, therefore, forced to understand *<ἐκάτερον>* *πρὸς ἐκάτερον*. M. Rodier virtually does the same: though he explains *ἔχει* by "contains" and makes the subject of the verb the central sense, with which *ἐν τῷ ἀνάλογον...δν* is in agreement, yet it is clear from his translation ("étant un par analogie et numériquement, il a en lui ces qualités diverses, dans le même rapport, l'une vis-à-vis de l'autre, que celles-ci sont entre elles dans la réalité") that he supposes the accusative after *ἔχει* to be something like this: *ταῦτα ἐκάτερον πρὸς ἐκάτερον ἔχοντα ὡς...ἄλληλα*. Simplicius, I believe, made no stop after *ὅρος*, for he certainly says that the two sensible qualities are one, not only with each other but with the knowing faculty (271, 21 sqq.).

a 24 *τί γὰρ διαφέρει...25 οἷον λευκὸν καὶ μέλαν;* This question, introduced abruptly, implies that the central sense is necessary wherever two sensibles are compared, whether they are heterogeneous, like sweet and warm, or the opposite qualities of the same genus, like white and black. Some such connexion as this may be imagined: "Not only in the case stated, but in every case; for etc." The point is worth urging, for some of those who have handled this perplexing passage trust rashly to the provisional statement of 426 b 10, and erroneously suppose that white and black are discriminated from each other by the single special sense of sight. Philop. puts the case the other way: 561, 4 *μὴ ἀπόρρῃ, φησὶν, πῶς τὰ ὁμογενῆ οἶδεν ἢ κατὰ μέρος αἰσθησις, εἴπερ οὐκ ἀπορρῃ πῶς τὰ ἀνομογενῆ οἶδεν ἢ κοινῇ αἰσθησις*. He, too, thinks that sight by itself is capable of pronouncing a judgment of difference or identity. Neuhaeuser also, p. 59, takes the meaning to be that whether we investigate the discrimination of heterogeneous qualities by the central sense or of opposite qualities by a single sense does not affect the problem: as if the discrimination of opposite qualities by a single sense 426 b 10 sqq. had not to be qualified by the whole subsequent discussion, particularly the remarks of 426 b 29—427 a 1, where the argument applies to any special sense as much as to the central sense. Cf. *De Sensu*, c. 7,

where the impossibility of two sensations occurring simultaneously is first established for a single sense (448 a 1—13) and then used to prove *a fortiori* a similar impossibility where the two sensibles are perceived by different senses (448 a 13—19). Upon the principles laid down 426 b 12—427 a 14 a judgment of difference is not possible, unless the two sensibles are simultaneously presented to the same judging faculty. But each special sense judges its objects successively, not simultaneously, and even in the extreme case when that object is a mixture of two or more components ἐξ ὧν ἓν τι γίγνεται, it is still a single object which the single sense judges, an object numerically one, *De Sensu* 7, 447 b 9—13.

a 24. τὰ μὴ ὁμογενῆ. The omission of μὴ from four of our MSS. here is an old error, for Simpl. also read τὰ ὁμογενῆ, which he nevertheless interpreted to mean heterogeneous sensibles, like sweet and warm: 272, 3 παραδείγματι χρησάμενος τῷ γλυκεῖ καὶ θερμῷ, ὁμογενέσι μὲν οὖσιν ὡς αἰσθητοῖς καὶ πορρωτέρω ἀλλήλοις κοινωνοῦσιν ἢ τὰ ἐναντία. This does not tend to inspire confidence in his guidance. Philop. explains correctly: 561, 6 ὁμογενῆ δὲ ἐκάλεσε τὸ μέλαν καὶ τὸ λευκόν· ὑπὸ τὸ χρῶμα γὰρ ἄμφω· ἀνομογενῆ δὲ τὸ λευκὸν καὶ γλυκὺ...ὡς διαφόροις αἰσθήσεσιν ὑποπίπτοντα (cf. also *ib.* 478, 1 sq., 25; 480, 5 sq.). The γένος of a special sensible is determined by the sense which perceives it, according as it is ὁρατόν, ἀκουστόν, ὁσφραντόν, γευστόν or ἅπτόν. The several opposite qualities, because perceived by the same sense, belong, like other contraries, to the same genus. Thus they are not so far removed from each other as heterogeneous sensibles. Cf. *De Sensu* 7, 448 a 13 εἰ οὖν πλείον ἐτι ἀπέχει ἀλλήλων καὶ διαφέρει τὰ συστοίχως μὲν λεγόμενα ἐν ἄλλῳ δὲ γένει τῶν ἐν τῷ αὐτῷ γένει λεγομένων (οἷον τὸ γλυκὺ καὶ τὸ λευκὸν ἀλλ' ὡς σύστοιχα, γένει δ' ἕτερα). The extremes which fall under the different senses are called σύστοιχα, *De Sensu* 7, 447 b 29 ἀλλ' ἐτέρως ἐκάτερον τῶν ἐναντίων [int. ἡ αἴσθησις κρίνει], ὡς δ' αὐτως ἑαυταῖς τὰ σύστοιχα, οἷον ὡς ἡ γεῦσις τὸ γλυκὺ, οὕτως ἡ ὄψις τὸ λευκόν· ὡς δ' αὐτὴ τὸ μέλαν, οὕτως ἐκείνη τὸ πικρόν. κρίνει, int. τὸ κρίνον.

a 25. τὰ ἐναντία. Opposites belong to the same genus, though specifically distinct: *De Sensu* 7, 447 b 26 λέγω δὲ τοῦτο, ὅτι ἴσως τὸ λευκὸν καὶ τὸ μέλαν, ἕτερον τῷ εἶδει ὄν, ἡ αὐτὴ [int. αἴσθησις] κρίνει. See also the citation from *De Gen. et Corr.* I. 7, 323 b 9 sqq., p. 493 sq. *supra*. Opposite sensibles are perceived by the same sense *De A.* 422 b 23—27, 422 b 10 sq., *De Sensu* 7, 448 a 3 ὑπὸ δὲ τὴν αἴσθησιν τὴν μίαν ἐναντία ἐστίν. Cf. Alex., *De Sensu* 142, 29 W οὐ γὰρ ἄλλως μὲν ἡ ὄψις ἕξεως καὶ στερήσεως τῶν ἐναντίων ἀντιλαμβάνεται, ἄλλως δὲ ἡ ἀκοή τῶν ἐν αὐτῇ ἐναντίων, καὶ ἄλλως πάλιν ἡ γεῦσις καὶ τῶν ἄλλων ἐκάστη, ἀλλὰ πᾶσαι τῶν ὑφ' ἑαυτὰς ἐναντίων ὁμοίως ἀλλήλαις καὶ ἀνάλογον· τῶν γὰρ συστοίχων ἀλλήλοις σύστοιχοι καὶ αἱ ἀντιλήψεις τε καὶ αἰσθήσεις, *ib.* 163, 14—17 W.

a 25 ἔστω δὴ...431 b 1 τὸ λευκόν. Besides its exact relation to the foregoing, which is by no means clear, this passage presents several difficulties. (a) What are Γ and Δ? (b) What use is made of ὥστε καὶ ἐναλλάξ? (c) What is meant by κακείνο ὁμοίως? Let us assume that, in resorting to symbols and probably to a diagram, the writer intended to make clearer what he had already said in the last sentence but one. As the text now stands, that sentence affirms that two objects simultaneously judged constitute a unity of some sort. (1) If the two objects are homogeneous opposites, let them be represented by A and B. We postulate another pair of opposites, Γ and Δ. Then not only is Γ to Δ as A to B, but *alternando* Γ : A :: Δ : B. The purpose with which the proportion *alternando* is introduced is perfectly clear: it is the only way in which ΓΔ, the third and fourth terms of the proportion, and AB, the first and second terms, can be brought together so that each pair becomes a unity by analogy or

proportion. See the passages cited for  $\acute{\epsilon}\nu\ \tau\acute{\omega}\ \acute{\alpha}\nu\acute{\alpha}\lambda\omicron\gamma\omicron\nu$  in *note* on 431 a 22  $\kappa\alpha\iota\ \tau\alpha\upsilon\tau\alpha$ . So long as the proportion takes the form  $\Gamma : \Delta :: A : B$ , we may attribute unity by analogy or proportion to  $A\Gamma$  or to  $B\Delta$ , but not to  $AB$  or to  $\Gamma\Delta$ . To take the instance in *Poet.* 1457 b 16 sqq.: when the cup is to Dionysus as the shield is to Ares, the cup is analogous to or one with the shield, but not with Dionysus. By the proportion *alternando*, then, we obtain here two unities by analogy or proportion,  $\Gamma\Delta$  and  $AB$ , and the conjunction of the terms forcibly reminds us of  $\tau\alpha\upsilon\tau\alpha\ \acute{\epsilon}\nu\ \tau\acute{\omega}\ \acute{\alpha}\nu\acute{\alpha}\lambda\omicron\gamma\omicron\nu$ . A further step may be taken. Assume that the pair of opposites  $\Gamma\Delta$  belong to the same logical subject,  $\acute{\epsilon}\nu\iota\ \acute{\upsilon}\pi\acute{\alpha}\rho\chi\epsilon\iota$ . Then  $\kappa\alpha\tau\grave{\alpha}\ \sigma\upsilon\mu\beta\epsilon\tau\eta\kappa\acute{o}\varsigma$  this pair  $\Gamma\Delta$  will be  $\acute{\epsilon}\nu\ \tau\acute{\omega}\ \acute{\alpha}\rho\iota\theta\mu\acute{\omega}$ , exactly as "musical" and "just" are in the same way  $\acute{\epsilon}\nu\ \tau\acute{\omega}\ \acute{\alpha}\rho\iota\theta\mu\acute{\omega}$  if they are both qualities of Coriscus. Thus we have instances of unity by analogy and one instance of numerical unity. We may then transfer to  $\Gamma\Delta$  and  $AB$  the conclusion stated in the words above about  $\tau\alpha\upsilon\tau\alpha$ , which comes, as I have said, to this, that each pair is an identical unity with diversity of relations. Both  $\Gamma\Delta$  and  $AB$  have been proved to be a unity of some sort, while their relations to their constituents taken severally are diverse; the relation of  $\Gamma\Delta$  to  $\Gamma$  is not that of  $\Gamma\Delta$  to  $\Delta$ . If, again,  $\Gamma\Delta$  are attributes of a single subject  $X$ , then of  $X$  also the same conclusion holds: it, too, is an identical unity with diverse relations. The above solution makes no attempt to determine what  $\Gamma$  and  $\Delta$  are: provided that they are  $\acute{\epsilon}\nu\alpha\upsilon\tau\iota\alpha$  and can be  $\acute{\epsilon}\nu\iota\ \acute{\upsilon}\pi\acute{\alpha}\rho\chi\omicron\nu\tau\alpha$ , it makes very little difference whether they are another pair of opposite sensibles or opposite  $\kappa\iota\eta\eta\sigma\epsilon\iota\varsigma$  of an  $\alpha\iota\sigma\theta\eta\tau\iota\kappa\acute{o}\nu$ , cf. 426 b 31 sq. The presumption is that, like the pairs hot-sweet, white-black, sweet-white, they are sensibles, as Simpl. conjectured (272, 12 sq.). But with the explanation I propose they will help us to answer the question  $\tau\acute{\iota}\nu\iota\ \acute{\epsilon}\pi\iota\kappa\rho\acute{\iota}\nu\epsilon\iota$ , even if they are not sensibles. (2) If the objects are heterogeneous, like sweet and white, let them again be represented by  $AB$ . We must postulate another pair of heterogeneous objects  $\Gamma\Delta$  such that  $\Gamma : \Delta :: A : B$ . Then *alternando*  $\Gamma : A :: \Delta : B$ . We have once more two unities by analogy or proportion,  $\Gamma\Delta$  and  $AB$ , and the proof follows the same course as before to the conclusion that, as  $\Gamma\Delta$ , so also the heterogeneous sensibles  $AB$  must form an identical unity with diverse relations, for the relation of  $AB$  to one of its constituents  $A$  is not that of  $AB$  to  $B$ .

Simplicius, whose solution has found an ardent advocate in M. Rodier, regards the whole passage as directed to confirm the assertion implied, though not explicitly stated, in the last sentence,  $\sigma\upsilon\delta\acute{\epsilon}\nu\ \delta\iota\alpha\phi\acute{\epsilon}\rho\epsilon\iota\ \tau\acute{o}\ \acute{\alpha}\rho\omicron\upsilon\epsilon\acute{\iota}\nu\ \kappa\tau\acute{\epsilon}$ . According to Simpl. (272, 3 sqq.), then,  $\Gamma\Delta$  are sweet-bitter, or any similar pair of contrary sensibles. By  $\acute{\omega}\sigma\tau\epsilon\ \kappa\alpha\iota\ \acute{\epsilon}\nu\alpha\lambda\lambda\acute{\alpha}\xi$   $A$ . means that the proportion white : black :: sweet : bitter involves the further proportion white : sweet :: black : bitter. By  $\kappa\acute{\alpha}\kappa\epsilon\acute{\iota}\nu\omicron\ \acute{\omicron}\mu\omicron\iota\omega\varsigma$  Simpl. apparently understands the terms of the proportion *alternando*, viz.  $A\Gamma$ , white-sweet or  $B\Delta$ , black-bitter: 272, 25  $\kappa\alpha\iota\ \pi\rho\acute{o}\varsigma\ \gamma\epsilon\ \tau\acute{\alpha}\ \acute{\epsilon}\nu\alpha\lambda\lambda\acute{\alpha}\xi$ . In other words, we started with the homogeneous contraries white-black, sweet-bitter, as attributes of one and the same subject (a 27  $\epsilon\iota\ \acute{\epsilon}\nu\iota\ \acute{\epsilon}\tau\eta\ \acute{\upsilon}\pi\acute{\alpha}\rho\chi\omicron\nu\tau\alpha$ ) and we get the result that what holds of these contraries, viz. identity conjoined with diversity of relation, has been proved to hold likewise of the heterogeneous pairs white-sweet, black-bitter. But we might have started,  $A$ . goes on to say (a 29 sq.), with the heterogeneous pairs, and then we should have been led to a similar conclusion respecting contraries. The gist of the illustration, then, according to Simpl., is that, if we once admit the office of central sense in respect of contraries like black and white, we are bound in consistency to concede a similar office in respect of heterogeneous sensibles; and similarly, if the office of the central sense be assumed for heterogeneous sensibles, its office for contraries will follow as a necessary consequence

of such an assumption: 272, 18 ἐν δὲ τῇ ἀναλογίᾳ καὶ τὸ ἐναλλάξ χῶραν ἔχει, καὶ ἔσται ὡς τὸ Α πρὸς τὸ Γ, οὕτω τὸ Β πρὸς τὸ Δ. τοῦτο δὲ παρείληπται, ἵνα μὴ μόνον ἐπὶ τῶν ἐναντίων, ἀλλ' ἐπὶ τῶν ὁμογενῶν [immo ἀνομογενῶν] τὸ ἐν γινόμενον νοῶμεν, ὅταν, ὡς εἴρηται, ἐν τῷ γινώσκον ἅμα ἦ τὰ διάφορα. τότε γὰρ καὶ τὸ λευκὸν καὶ τὸ γλυκὺ ἐν γίνεται καὶ τὸ μέλαν καὶ τὸ πικρὸν, ἅπερ οὐκ ἐναντία μὲν, ὁμογενῇ [immo ἀνομογενῇ] δὲ ὅμως καὶ αὐτὰ κατὰ τι πορρώτερον γένος τοῦ χρώματος. ὁ τοίνυν ἐνδὸς πρὸς τὸ ὁπωσοῦν ἀλλήλοισ ἐν γίνεσθαι τὰ ΑΒ ἢ τὰ ΓΔ καὶ θύτερα δώσει, καὶ πρὸς γε τὰ ἐναλλάξ. Philop. (561, 10 sqq.) understood ΓΔ of the λόγοι or εἶδη of black and white: more precisely (since he desired to establish a close connexion with what has preceded and what will follow about διάνοια πρακτική, 555, 7 sqq.) the νοητὸν εἶδος of each, which is presented to the same single judging faculty, νοῦς, as the sensible qualities white and black are presented to the single judging faculty, the central sense.

Neuhaeuser, as we have seen, regards ταῦτα and ἐκείνα a 22 sq. *supra* as meaning respectively the sensations before the central sense and the objective qualities giving rise to those sensations. This distinction, he thinks, is here reproduced, ΑΒ answering to ἐκείνα, ΓΔ to ταῦτα, i.e. to the sensations, here of black and white. It is these, and not the objective qualities, which, as he contends, are present to the judging faculty. Hence Neuhaeuser retains the words a 26 ὡς ἐκείνα πρὸς ἀλλήλα (repeated from a 23), which Christ, Freudenthal, Baeumker and Biehl rejected as spurious. According to Neuhaeuser, Α. admits that a single sense is competent to discriminate the contraries in its own genus: black and white are judged by the single sense sight. If ΓΔ, the two sensations to be judged, belong to the same sense, they will be related as the corresponding qualities, so far as these latter belong to one and the same object. That is, they will be ἐν τῷ ὑποκειμένῳ, though logically distinct. And the same relation will hold between the sense and its object (κάκεινο ὁμοίως). At a 29 δ δ' αὐτὸς λόγος the proof is resumed. What has been established for a single sense and its object can similarly be demonstrated for the central sense and its object, the pair of heterogeneous sensations. The point of the illustration, then, is that, as contrary sensations, white and black, stand related to one of the special senses, sight, so heterogeneous sensations, white and sweet, are related to the central sense. Α. seeks to prove that from the numerical identity joined with logical distinctness implied in the former case can be deduced the same numerical identity joined with logical distinctness for the latter case, both as between the heterogeneous sensations themselves and as between the heterogeneous sensations and the central sense. The analogy between the union of different or even opposite qualities in the same external thing and the union of different or even opposite relations of the one judging faculty, which is nevertheless numerically identical, is used, as Neuhaeuser points out, by Α. himself *De Sensu* 7, 449 a 13 ἡ ὥσπερ ἐπὶ τῶν πραγμάτων αὐτῶν ἐνδέχεται, οὕτως καὶ ἐπὶ τῆς ψυχῆς. τὸ γὰρ αὐτὸ καὶ ἐν ἀριθμῷ λευκὸν καὶ γλυκὺ ἐστί, καὶ ἄλλα πολλά, εἰ μὴ χωριστὰ τὰ πάθη ἀλλήλων, ἀλλὰ τὸ εἶναι ἕτερον ἐκάστω. ὁμοίως τοίνυν θεῖον καὶ ἐπὶ τῆς ψυχῆς τὸ αὐτὸ καὶ ἐν εἶναι ἀριθμῷ τὸ αἰσθητικὸν πάντων, τῷ μέντοι εἶναι ἕτερον καὶ ἕτερον τῶν μὲν γένει τῶν δὲ εἶδει. But, as I have tried to show above, it seems a mistake to attribute to sight or any of the special senses the power of discrimination between homogeneous objects simultaneously present, except in so far as a special sense is employed as an instrument by the central sense: cf. *De Sensu* 7, 449 a 8 ἀνάγκη ἄρα ἐν τι εἶναι τῆς ψυχῆς, ᾧ ἅπαντα αἰσθάνεται, καθάπερ εἴρηται πρότερον, ἄλλο δὲ γένος δι' ἄλλου, i.e. ὁρατὸν διὰ τῆς ὕψεως, ἀκουστὸν διὰ τῆς ἀκοῆς κτέ. Sight, as a special sense, apprehends white and black successively: *sensus communis*, employing sight as

its instrument, apprehends white and black simultaneously. On the other hand, if Simpl. has the right interpretation, it is surprising that A., whose real point, according to Simpl., is to establish the proposition for *κάκεινο ὁμοίως* (τὸ ἐναλλάξ), i.e. for ΑΓ or ΒΔ, should be at the pains to establish it first for ΓΔ, a conclusion which does not advance us beyond the point from which we started, the pair of contraries ΓΔ being in all respects similar to the pair of contraries ΑΒ. I suspect Simpl. is no more right about *ὥστε καὶ ἐναλλάξ* than about τὰ ὁμογενῆ, his *lectio falsa* at 431 a 24. He just assumes that, being simultaneously apprehended, A and B are one: 272, 15 εἰ οὖν τὰ ΑΒ ἐν πρὸς ἄλληλα γίνεται, ὅταν ἅμα γινώσκηται, καὶ τὰ ΓΔ ὁμοίως ἐν γενήσεται ἢ ἀριθμῷ ἢ ἀναλογίᾳ, ἀριθμῷ μὲν διὰ τὸ ἐνὶ καὶ τῷ αὐτῷ γνωρίζεσθαι, ἀναλογία δὲ διὰ τὸ κατὰ διαφόρους λόγους μηδὲν μᾶλλον θάτερον ἢ ἦττον. ἐν δὲ τῇ ἀναλογίᾳ καὶ τὸ ἐναλλάξ χώραν ἔχει κτέ. These remarks precede the introduction of *alternando*. He appears to understand by *ὥσπερ καὶ τὰ ΑΒ* "as we know A and B to be," whereas I take these words to be a part of the inference: "and so will ΑΒ be related." Again, if ΓΔ are αἰσθητά, not αἰσθήματα, the single subject to which they belong ought to be the external thing rather than the central sense. Neuhaeuser indeed, p. 60, explains *κάκεινο ὁμοίως* as referring equally to the thing in which the sensible qualities inhere and the sense or sentient subject in which the sensations inhere: "jenes eine Princip, der Sinn und das Object." Lastly, Simpl. states (272, 28) that at ὁ αὐτὸς λόγος A. resumes ὅπερ διὰ τοῦ ἐναλλάξ ἐνεδείξατο. If so, and if the *alternando* has no purpose in what precedes, why was it gratuitously anticipated?

a 27. *ὥστε καὶ ἐναλλάξ*, int. ἀνάλογον ἔσται. Cf. *Eth. Nic.* 1131 b 5 ἔσται ἄρα ὥς ὁ α ὅρος πρὸς τὸν β, οὕτως ὁ γ πρὸς τὸν δ, καὶ ἐναλλάξ ἄρα, ὥς ὁ α πρὸς τὸν γ, ὁ β πρὸς τὸν δ. For the omission of a verb after *ὥστε καὶ* cf. *ib.* 1131 b 7 *ὥστε καὶ τὸ δλον πρὸς τὸ δλον*, *De Part. An.* I. 3, 642 b 35 ἀναγκαῖον γὰρ τῶν καθ' ἕκαστον ὑπάρχειν τινὶ τῶν διαφορῶν ἐκάστην, ὥστε καὶ τὴν ἀντικειμένην and the citations in *note* on 406 b 1. τὰ ΓΔ, an abbreviation for τὸ Γ καὶ τὸ Δ. Sometimes the singular article τὸ is prefixed in the same sense: cf. *Phys.* VIII. 5, 258 a 9—18 in the light of 258 a 1—5.

a 29. *κάκεινο*. There is a strong temptation to adopt the conjecture *κάκεινα* and make "they also" recapitulate, referring to ΓΔ, the subject of a 28 *ἔξει*. Or this might still be possible with the singular *κάκεινο*, since ΓΔ form a unity. I have translated it differently, referring it to the single subject, in which Γ and Δ *ex hypothesi* inhere. ὁ δ' αὐτὸς λόγος. The same argument will apply if we take heterogeneous, instead of opposite, sensibles. See *note* on 431 a 25, *ἔστω δὲ, σύφρα*.

431 b 2 τὰ μὲν οὖν εἶδη...12 καὶ τινί. A. now returns to νοῦς πρακτικὸς or (a 14) ἡ διανοητικὴ ψυχὴ and the part it plays in moving us to action, alike (1) in present sensation and (2) apart from sensation, when we are dealing only with the images and ideas in the mind. The first case is illustrated by the beacon fire, the second case is stated in general terms b 6—9 *ὅτι δὲ...διώκει*. When we see the signal of an enemy's approach we are moved to action, at other times the mere imagination or idea in the mind is sufficient to prompt pursuit or avoidance after calculation and deliberation. The general sense is clear, though there are difficulties in detail.

b 2. τὸ νοητικόν. Cf. Simpl. 273, 26 δηλαδή τὸ πρακτικόν· τοῦτο γὰρ τὸ διώκον ἢ φεύγον. A. may have this chiefly in mind here, but, as the φάντασμα is just as indispensable for νοῦς θεωρητικός, 432 a 8, the statement should be taken quite generally. Cf. *supra* 431 a 14 sq. ἐν τοῖς φαντάσμασι νοεῖ. The sense conveyed by ἐν here and 432 a 4 sq. hardly differs from that of οὐκ ἄνευ

431 a 17: cf. 432 a 8, 13. The statement is repeated here in order to draw the inference that rational desire has a freer range than that *ἐπιθυμία* which is prompted by present sensation to pursue what is pleasant.

b 3 καὶ ὥς ἐν ἐκείνοις...5 κινεῖται. The main purpose is to bring out the difference between νοῦς πρακτικὸς and αἴσθησις, which is a consequence of the employment of φαντάσματα. 'Νοῦς πρακτικὸς' not only operates under the stimulus of actual sensation, of which an illustration is given by the fire-signal; but it can also, as above explained, operate through φαντάσματα apart from and independently of present sensation (see 431 a 14, 428 b 27), and this is illustrated by the process of calculation and deliberation, when only images are before the mind, b 6 ὅτ' ἐδὲ...9 διώκει. The details are obscure, e.g. ἐν ἐκείνοις, αὐτῷ and the subject to κινεῖται. To take the last first. In the illustration the subject of γνωρίζει, being qualified by αἰσθανόμενος and ὁρῶν, must be the individual man: cf. 408 b 13. This will also suit b 7, 8 λογίζεται, βουλεύεται, εἴπη. We can hardly be wrong, then, in taking the same subject for κινεῖται, which, if it means ὁρέγεται, includes both φεύγει and διώκει of b 9. In spite, then, of the opening sentence b 2 τὸ νοητικὸν...νοεῖ, throughout this section A. leaves the faculties for the concrete possessor, the subject or individual who perceives, deliberates and desires. It is true, τὸ νοητικὸν might be the subject of κινεῖται: cf. *Μεταφρ.* 1072 a 30 νοῦς δὲ ὑπὸ τοῦ νοητοῦ κινεῖται. But, if we go back to faculties, it must be τὸ ὁρεκτικόν, as we shall see 433 b 17 κινεῖται γὰρ τὸ κινούμενον ἢ ὁρέγεται, b 27 ἢ ὁρεκτικὸν τὸ ζῶν, ταύτῃ ἑαυτοῦ κινήτικόν. But the expression here is rather parallel to 433 b 18 τὸ δὲ κινούμενον τὸ ζῶν: cf. 433 a 24. As for αὐτῷ, although it is very natural to take it as τῷ νοητικῷ and ὄρισται as recalling 431 a 15 ὅταν δὲ...16 διώκει, it is just as easy to refer it to the individual man, and the decision must lie with ἐν ἐκείνοις. From καὶ ἐκτὸς τῆς αἰσθήσεως it may be inferred that b 3 ὥς...φευκτὸν has to do with sensation: compare the illustration b 5 sq. This would make it impossible that ἐν ἐκείνοις should mean ἐν τοῖς φαντάσμασιν.

b 4. καὶ ἐκτὸς τῆς αἰσθήσεως. I take καὶ as "even" or "also." Because the mind distinctly cognises good to pursue and evil to avoid among the νοητὰ implicated in the imaginations of sense, even in the absence of actual sensation we are moved to act. If ὥς...καὶ be taken to correspond to each other, "as...so also," the clause ὥς...φευκτὸν will refer exclusively to the case when there is an actual sensation, and ἐν ἐκείνοις must be taken to mean ἐν τοῖς αἰσθητοῖς: cf. below b 8 ὅταν εἴπη ὥς ἐκεῖ τὸ ἡδὺ ἢ λυπηρόν. So *Simpl.* 273, 35 ἐν ἐκείνοις λέγων τοῖς αἰσθητοῖς, καθάπερ αὐτὸς σαφῶς ἐρμηνεύει ἀντιδιαίρων αὐτοῖς τὰ ἐκτὸς τῆς αἰσθήσεως, ἅπερ ἐστὶ τὰ φανταστά. Hammond in his translation (p. 124) appears to join καὶ ἐκτὸς τῆς αἰσθήσεως with ὥς ὄρισται, and not with κινεῖται, understanding ἐν ἐκείνοις to mean ἐν τοῖς φαντάσμασιν. So taken, the words become quite pointless.

b 4. ἐπὶ τῶν φαντασμάτων ἦ. *Torstrik* supplies τὸ διωκτὸν καὶ τὸ φευκτὸν as the subject: as remarked above, I prefer ὁ νοῶν. Εἶναι ἐπὶ c. gen. means to attend to, to be occupied with, as e.g. in *Demosthenes* ἐπὶ τῶν πραγμάτων, ἐπὶ τοῦ πολεμεῖν εἶναι.

b 5. κινεῖται, i.e. is moved to action: apparently meant to include φεύγει ἢ διώκει under one expression, as in 433 b 17. Cf. 433 b 27 sq. and 433 a 24 sq. That διανοεῖσθαι is in popular view a κίνησις was admitted 408 b 3 sq., 6. *Simpl.* 273, 38 τουτέστιν ἐγείρεται εἰς λογισμόν καὶ βουλὴν τὴν περὶ αὐτὸν seems to me a little too precise.

b 5 ὅν αἰσθανόμενος...6 πολέμιος. This illustrates the case of present sensation: "if we see something alarming—the beacon torch in motion, for



instance—we are immediately moved to action" (Bywater). Here νοῦς plays its part. Cf. Simpl. 274, 10 καὶ γνωρίζει ὁ νοῦς συντιθεὶς τὸ μὲν ἀπὸ τοῦ αἰσθητοῦ, τὸ δὲ ἀπὸ τοῦ περὶ ταῦτα λόγου ἀναφέρων εἰς τὸ τὸν φρυκτὸν παρουσίας πολεμίων εἶναι σύμβολον. τὸν φρυκτὸν. The corruption to φευκτὸν in five of our MSS. can be traced in Them.: see Heinze's critical apparatus on Them. 114, 1. By a military convention, a beacon fire or torch, if stationary, signified the approach of friends, while torches in motion were a warning of the approach of the enemy: Thuc. II. 94, III. 22, 80, VIII. 102. Cf. the Scholiast on Thuc. II. 94 φρυκτοὶ εἰσι λαμπάδες τινὲς ἀπὸ ξύλων γιγνόμεναι, ἅστινας βασιτάζοντες ἄνωθεν τῶν τειχῶν ἐσήμαινον τοῖς πλησιοχώροις ἢ τοῖς συμμάχοις ὅτ' ἂν τινες ἑώρων πολεμίους ἐπιόντας, ὥς δὲ προφυλάξασθαι. οὐ μόνον δὲ ἐπὶ τῶν πολεμίων τοῦτο ἐποιοῦν, ἀλλὰ καὶ ἐπὶ φίλων· ὅτ' ἂν ἑώρων βοήθειαν αὐτοῖς ἐρχομένην, ἐσήμαινον πάλιν διὰ τῶν φρυκτῶν ὥς οὐ δεῖ θορυβεῖσθαι. καὶ ὅτ' ἂν μὲν φίλους ἐδήλουν, ἐβάσταζον τοὺς φρυκτοὺς ἡρεμοῦντες· ὅτ' ἂν δὲ πολεμίους, ἐκίνουν τοὺς φρυκτούς.

b 5. [τῇ κοινῇ], int. αἰσθήσει: but it is impossible to reconcile this with the conclusion of III., c. 1, viz. that there is no αἰσθητήριον for τὰ κοινὰ distinct from, and additional to, the ordinary five senses. It is by sight alone, τῇ ὄψει, and not by the common meeting place of all the five senses, that the beacon in motion is perceived in the case before us. Simplicius was aware of the difficulty and proposed to meet it by transposing γνωρίζει to precede ὅτι πολέμιος and punctuating after κινούμενον and before γνωρίζει thus transposed (274, 14—17). The sentence then reads τῇ κοινῇ ὁρῶν κινούμενον, γνωρίζει ὅτι πολέμιος. Thus Simpl. joins τῇ κοινῇ closely with ὁρῶν κινούμενον, not with γνωρίζει, and explains τῇ κοινῇ as τῇ τῶν κοινῶν (274, 6 sq.). Torstrik made a decided improvement upon this lame explanation by conjecturing κινήσει for κοινῇ: cf. his proposal of κοινῇ in 425 a 17 in place of the κινήσει of the MSS. The pleonasm τῇ κινήσει ὁρῶν κινούμενον is not in itself decisive against this conjecture. Bywater's proposal (*Journ. of Phil.* xvii. p. 61) to excise τῇ κοινῇ as a marginal gloss is the most satisfactory solution of the difficulty. As he says:—"The antithesis here is simply between what we see (ὁρῶν) and what we only *as it were* see (ὥσπερ ὁρῶν), i.e. imagine; and it is weakened or rather utterly spoilt by the addition of a superfluity like τῇ κοινῇ—which seems due to some annotator who was aware that κίνησις was one of the κοινὰ αἰσθητά, but did not understand the Aristotelian theory as to how we know them."

b 6 ὅτε δὲ...8 παρόντα. Here we pass ἐκτὸς τῆς αἰσθήσεως to the cases where the mind is taken up with its own ideas and imaginations, employing them in the deliberation which precedes action. As we shall see 433 b 29, 434 a 7, imagination so employed by rational beings is termed λογιστικὴ or βουλευτικὴ φαντασία, and the procedure of weighing the future against the present is further elucidated 433 b 5—10, 434 a 5—10. The accusative τὰ μέλλοντα b 8 is governed by λογίζεται, to which καὶ βουλεύεται is attached by a sort of after-thought. Cf. Plato, *Theaet.* 186 A ἀναλογομένη ἐν ἑαυτῇ τὰ γεγονότα καὶ τὰ παρόντα πρὸς τὰ μέλλοντα.

b 8 καὶ ὅταν εἴπῃ...9 φεύγει ἢ διώκει. Deliberation ends in a decision or pronouncement, which takes the form of a judgment or proposition, either of which can be denoted by εἴπη: cf. λέγει 426 b 20, 21, 22, φήσῃ ἢ ἀποφῃσῃ 431 a 16. The question arises whether ἐκεῖ and ἐνταῦθα are antithetical. They can hardly be so in the way Torstrik supposes, viz. ἐκεῖ=in the future, ἐνταῦθα=in the present: et si dicit futurum esse iucundum quid vel triste, iam nunc fugit vel persequitur. Nor is Wallace's account more satisfactory, viz. that ἐκεῖ=in the speculative sphere, ἐνταῦθα=in the practical sphere. If an antithesis must

be found, it would be better to make *ὡς ἐκεῖ* refer to *αἰσθητά*, the expression seeming to recall b 3 *ὡς ἐν ἐκείνοις...φευκτόν*. But, if so, the sentence is extraordinarily brief and elliptical: *ὅταν εἴπῃ* [int. *τὸ ἀγαθὸν ἢ κακὸν*] *ὡς ἐκεῖ* [int. *εἰπεῖ*] *τὸ ἡδὺ ἢ λυπηρόν*, the word *ἐνταῦθα* implying *τὸ ἀγαθὸν ἢ κακὸν* to balance *τὸ ἡδὺ ἢ λυπηρόν*. Thus *ὡς* is comparative and is not used to introduce a clause in indirect speech. Some indeed take *εἴπῃ ὡς ἐκεῖ τὸ ἡδὺ ἢ λυπηρόν* to mean "pronounces that there lies pleasure or pain," as if the clause with *ὡς* contained the substance of the pronouncement. To this view Torstrik objects that A. of all men would be least likely to make rational action depend solely upon pleasure and pain. It may be urged that pleasure and pain are the ordinary motives of human action and that in *Eth. Nic.* VII. and X. the highest good is almost, if not altogether, identified with pleasure. But, granting all this, why should A. assign to rational desire the same *ὀρεκτόν* as to irrational desire or *ἐπιθυμία*, whether in man or brute, if all along his object is, as we have shown, to distinguish *νοῦς πρακτικὸς* from *αἰσθησις*? And why should he do this when a moment before he has been describing the calculation and balancing of the future against the present, which is only possible for creatures who have a perception of time and are swayed by the conflicting impulses of *λόγος* and *ἐπιθυμία*? Cf. 433 b 5 sqq.

b 10. *καὶ ὅλως ἐν πράξει*. With these words repeat *φεύγει ἢ διώκει*. There will then be no need to conjecture with Trend. *οὕτως* for *ὅλως*. Cf. *Simpl.* 275, 4 *πράττει δὲ ἢ τοῦ ἀγαθοῦ ἐπιδιώκων μετάληψιν ἢ τὸ κακὸν ἀποδιοπομπούμενος*. In spite of this sensible note, Simplicius would seem to have missed the construction and supplied *έστιν* with *ἐν πράξει*: 275, 3 *καὶ καθόλου πράττει τι τοῦτο γὰρ δηλοῖ τὸ ὅλως ἐν πράξει*. Even then we are not justified in translating with M. Rodier: "et d'une manière générale, il passe à la pratique." Cf. *Metaφh.* 1078 a 31 *τὸ ἀγαθὸν καὶ τὸ καλὸν ἕτερον (τὸ μὲν γὰρ αἰεὶ ἐν πράξει, τὸ δὲ καλὸν καὶ ἐν τοῖς ἀκινήτοις)*.

b 10 *καὶ τὸ ἄνευ δὲ πράξεως...12 τινί*. *Intellectus practicus non est penitus diversus ab intellectu theoretico: nam verum et bonum in eadem συστοιχία continentur, item falsum et malum: differunt ita ut bonum semper referatur ad aliquem vel ad aliquid cui bonum est, verum non item* (Torst.). The truth and falsehood which are contemplated independently of action must belong to *νοῦς θεωρητικός*. Simplicius, however, refers this sentence also to *νοῦς πρακτικός*, understanding the distinction intended by *τῷ ἀπλῶς καὶ τινί* to be the distinction between general propositions and particular cases, or between the major premiss and the minor premiss of the practical syllogism: 275, 18 *ἄνευ...τοῦ πράττειν τι σκοπῶν τὰ πρακτὰ καὶ ὁποῖον τὸ ἐν αὐτοῖς ἀληθές τε καὶ ψεῦδος, ὡς πρακτικὸς καὶ τότε ἐνεργεῖ, οὐχ ὡς τότε πράττων τι, ἀλλ' ὡς ὅτε δέοι πράττειν, τῇ φανείῃ αὐτῷ καθόλου χρησόμενος ἀληθείᾳ*: an unnatural interpretation, which ignores *De A.* 433 a 14 *διαφέρει δὲ τοῦ θεωρητικοῦ τῷ τέλει*. Cf. *Eth. Nic.* 1139 a 27 *τῆς δὲ θεωρητικῆς διανοίας καὶ μὴ πρακτικῆς μηδὲ ποιητικῆς τὸ εὖ καὶ κακῶς τἀληθές ἐστι καὶ ψεῦδος*. What the genus is which includes τὸ ἀληθές and τὸ ἀγαθόν may be gathered from *Metaφh.* 1072 a 26—b 4, where τὸ ὀρεκτόν τὸ πρῶτον and τὸ νοητόν τὸ πρῶτον are identified. But the primacy is given to *νοητόν* (*ἀρχὴ γὰρ ἡ νόσις*), and the series or list, *συστοιχία*, of what is *per se* *νοητόν* is said to include not only *ἡ οὐσία ἢ ἀπλῆ καὶ κατ' ἐνέργειαν*, but also τὸ καλὸν καὶ τὸ δι' αὐτὸ αἰρετόν. To the same positive side of the table would belong τὸ ἀληθές. The subject of 431 b 12 *διαφέρει* is τὸ ἀληθές καὶ τὸ ἀγαθόν or τὸ ψεῦδος καὶ τὸ κακόν. In the first case τῷ ἀπλῶς καὶ τινί is abbreviated for τῷ τὸ ἀληθές ἀπλῶς εἶναι ἀληθές καὶ τῷ τὸ ἀγαθόν τινί εἶναι ἀγαθόν. This does not mean that good is *πρὸς τι* in the sense that there is no absolute good, but

that of the two senses of good or end-in-itself distinguished 415 b 2 (see *note* ad loc.) we are dealing with τὸ ᾧ and not with τὸ οὐ. Truth is constant, it is not τὸ φαινόμενον, 404 a 28 sq., whereas the good for a particular person or thing may very well be, and often is, other than τὸ ἀπλῶς ἀγαθόν. It is only in the judgment of the truly good man that they coincide, *Eth. Nic.* 1113 a 22—b 2, 1129 b 1—6, 1152 b 26 sq., *Eth. Eud.* VII. 15, 1248 b 26 sq., III. 1, 1228 b 19, VII. 2, 1235 b 31 sq., *Metaph.* 1029 b 5 καὶ τοῦτο ἔργον ἐστίν, ὥσπερ ἐν ταῖς πράξεσι τὸ ποιῆσαι ἐκ τῶν ἐκάστω ἀγαθῶν τὰ ὅλως ἀγαθὰ ἐκάστω ἀγαθῷ, οὕτως ἐκ τῶν αὐτῶ γνωριμωτέρων τὰ τῇ φύσει γνώριμα αὐτῶ γνώριμα. The task of the moralist is to make good absolute my good, the task of the thinker is to rise from the most familiar facts of experience to the laws of nature.

b 12 τὰ δὲ ἐν ἀφαιρέσει λεγόμενα... ἰὸ ὅταν νοῇ ἐκεῖνα. See Bywater in *Journ. of Phil.* XVII., p. 62: "The construction here has been misunderstood by some, through failure to see that in the clause ὥσπερ ἂν εἰ κτέ. the relative has as a grammatical antecedent the οὕτω before τὰ μαθηματικά, the sentence being in point of form just like that in III. 6, 430 a 28—30 (καθάπερ... οὕτω κτέ.) where the punctuation has been duly set right by Vahlen. And as regards the ἂν after ὥσπερ, I take it to be an anticipation of the ἂν in the apodosis (ἄνευ τῆς σαρκὸς ἂν ἐνόει), so that ὥσπερ ἂν εἰ is not to be understood in the same way as what is sometimes written ὥσπερ ἀνεί. The general sense of the passage, if we for a moment ignore all difficulties of detail, seems clear enough. As for τὰ μαθηματικά, though they are really inseparable, we think them as separate from matter, just in the same way as, if one thought the σιμόν as simply hollow, one would think it so as apart from the flesh (the nose), the particular matter wherein it is found." For τὸ σιμόν = κοιλότης ἐν ῥινί (*Metaph.* 1030 b 32) see *note* on 429 b 14. The present passage affords a striking proof of the impossibility to the Greek of the time of conceiving τὸ σιμόν as merely hollow without thinking of a nose, the imperfect indicatives εἰ τις ἐνόει... ἂν ἐνόει serving to express unfulfilled conditions: "if any one conceived (as he never does)." Bywater, thinking it impossible to get the required meaning out of the text as it stands, would reconstruct the earlier part of the passage as follows: τὰ δ' ἐν ἀφαιρέσει λεγόμενα νοεῖ, ὥσπερ ἂν, εἰ <τις> τὸ σιμόν ἢ μὲν σιμόν οὐ [κεχωρισμένως], ἢ δὲ κοῖλον [εἰ τις] ἐνόει, ἐνεργεῖα <νοῶν> ἄνευ τῆς σαρκὸς ἂν ἐνόει ἐν ἢ τὸ κοῖλον, οὕτω τὰ μαθηματικά κτέ. In this reconstruction b 14 <νοῶν> comes from b 17 and b 14 [κεχωρισμένως] is due to the variant κεχωρισμένως for b 16 κεχωρισμένα attested by Simpl. 278, 32. But the irregularity of the traditional text is partly explained if we reflect that of the two clauses ἢ μὲν σιμόν... ἢ δὲ κοῖλον it is only the second clause which is challenged: for the purpose of the argument it is superfluous to drag in the first at all, though this is done idiomatically to point the antithesis, and the antithesis is heightened by the scrupulous pedantry with which οὐ κεχωρισμένως is set over against ἄνευ τῆς σαρκὸς. When we come to b 16 ὅταν νοῇ ἐκεῖνα, it is scarcely possible to determine whether τὰ ἐν ἀφαιρέσει λεγόμενα, the classic phrase for τὰ μαθηματικά (see *note* on 403 b 15 ἐξ ἀφαιρέσεως), is felt by A. to be so far distinct from τὰ μαθηματικά as to justify him in using ἐκεῖνα instead of αὐτά. Bonitz and Vahlen conjecture ἢ ἐκεῖνα. Trend. and Torst. understand τὰ αἰσθητά by ἐκεῖνα, but such a technical use of this pronoun is without authority. The way in which mathematical conceptions are abstracted and regarded by the mathematician has been explained on 429 b 18—22, where see *notes*. See also 403 a 12—15 with *notes*. As the word νοεῖ implies, the mathematical conceptions are νοητά, although the material objects from which alone they can be abstracted are αἰσθητά. Such is the plain teaching of 432 a 4 sq.: cf. *De Caelo* III. 7, 306 a 27

αἱ μὲν γὰρ [int. ἐπιστῆμαι] καὶ τὸ νοητὸν λαμβάνουσι διαμετόν, αἱ μαθηματικαί, *Metaph.* 1077 b 34—1078 a 31, especially 1078 a 21 ἄριστα δ' ἂν οὕτω θεωρηθεῖη ἕκαστον, εἴ τις τὸ μὴ κεχωρισμένον θεῖη χωρίσας, ὅπερ ὁ ἀριθμητικὸς ποιεῖ καὶ ὁ γεωμέτρης, 1061 a 28—b 3. The present passage explains the statement *Metaph.* 1051 a 30 αἴτιον δ' ὅτι νόησις ἡ ἐνέργεια [int. τῶν μαθηματικῶν], as will be seen if the whole context 1051 a 21—33 be carefully examined. See first *note* on 430 a 21 *supra*.

b 17. [νοῶν]. The balance of authority (codd. LU, the first hand of E, Philop.) is against the retention of this word: Delevi b 17. νοῶν, quod deteriores libri aliquot addunt: legebatur enim: ὅλως δὲ ὁ νοῦς ἐστὶν ὁ κατ' ἐνέργειαν τὰ πράγματα νοῶν. Sine dubitatione ὁ κατ' ἐνέργειαν νοῦς est ὁ νοῶν νοῦς: sed illud satis erat dixisse (Torst.). We have had the statement before 430 a 3—9 and get it again directly 431 b 21.

b 18. τῶν κεχωρισμένων τι. See *note* on 403 b 15, ἥ δὲ κεχωρισμένα. The fact that we do think τὰ κεχωρισμένα and that this is indeed the province of the metaphysician or First Philosopher is not questioned. The doubt is whether from this fact of experience any inference can be drawn as to the nature of intellect. ὄντα αὐτὸν μὴ κεχωρισμένον. The perfect participle κεχωρισμένος used as an adjective would seem to stand to χωριστὸς as διηρημένος to διαμετός.

b 19. σκεπτέον ὑπερον. Where this enquiry should come is matter for conjecture. From the form of the reference in *De Mem.* 1, 450 a 7 διὰ τίνα μὲν οὖν αἰτίαν οὐκ ἐνδέχεται νοεῖν ἄνευ τοῦ συνεχοῦς, οὐδ' ἄνευ χρόνου τὰ μὴ ἐν χρόνῳ ὄντα, λόγος ἄλλος, it would seem that when that treatise was composed it was not yet forthcoming.

## CHAPTER VIII.

**431 b 20—432 a 14.** To sum up: the soul is in a manner the universe of things, which is made up of things sensible and things intelligible: and knowledge is in a manner identical with its object, the intelligible; sense with its object, the sensible. This statement calls for further explanation [§ 1]. Sense and knowledge, whether potential or actual, are distributed over things potential or actual, as the case may be. In the soul, again, the sensitive faculty and the cognitive faculty are potentially their respective objects. These objects must therefore exist in the soul, not indeed as concrete wholes, form and matter combined, which is impossible: it must be the *forms* of things which exist in the soul. Thus within the soul intellect is the form of forms, i.e. of intelligible forms, and sense the form of sensibles, precisely as in the body the hand is the instrument of instruments, i.e. the instrument by which other instruments are acquired [§ 2]. The world of things consists of extended magnitudes which sense can apprehend; and nothing else, it would seem, has independent existence. In the forms which sense apprehends are to be found the forms which the mind thinks; the abstractions of mathematics no less than the properties and conditions of sensible things. And this is why sense-perception is indispensable to the acquisition of knowledge and to understanding. And when the mind is applying its knowledge and actually thinking, mental images are indispensable, and these serve instead of present sensations. The imagining faculty, however, is something distinct from affirmation and negation, for it is a combination of notions which makes truth and falsehood. If it be asked, how the simplest notions are distinguishable from imaginations of sense, we reply

that in no case is the notion the image, even though it is never independent of an image [§ 3].

431 b 20. τὰ λεχθέντα συγκεφαλαιώσαντες. We proceed to sum up the conclusions as to thought already reached, viz. in III., cc. 4—7, and those for sense, mainly in III., c. 2. The solution of the problem of knowledge amplifies and expands various intimations given in the course of the treatise.

b 21. πάλιν, "over again," not simply "as our predecessors have said before us," although it is true that A. discovers the germs of his own doctrine in the interpretations which Empedocles and Plato gave of the principle that like is known by like: compare 404 b 8—15, 16—18, 409 b 27 ὥσπερ ἂν εἰ τὴν ψυχὴν τὰ πράγματα τιθέντες. Nor is πάλιν used quite in the sense noted *Ind. Ar.* 559 b 13 "πάλιν omnino progressum in narrando enumerando quaerendo significat." The re-statement here introduces the discussion which substitutes τὰ τῶν ὄντων εἶδη for the unqualified τὰ ὄντα.

b 22 ἔστι δ'...23 τὰ ἐπιστητά πῶς. See 430 a 3—9, especially a 4, 5, 430 a 19, 20, 431 a 1. Here Alex. Aphr., *De An.* 91, 7—92, 11 is excellent.

b 23. ἡ δ' αἰσθησις τὰ αἰσθητά, int. πῶς. From 425 b 26—426 a 26 πῶς appears to represent the addition of κατ' ἐνέργειαν to ἐπιστήμη...ἐπιστητά, αἰσθησις...αἰσθητά: but it is better referred to the qualification given b 28 sqq. *infra*.

b 24. τέμνεται οὖν...εἰς τὰ πράγματα. The authority for the text is not strong (see crit. notes), but in b 25 and b 26 there is no variant of εἰς: hence Torstrick's proposal to replace εἰς in a 24 by ὥσπερ καί, though apparently favoured by Bonitz (*Ind. Ar.* 754 a 30), leaves half the difficulty untouched. At the same time there can be no doubt that Torstrick's proposal gives the true sense; knowledge and sense-perception are divided by the same dichotomy as things. As things are either potentially or actually existent, so knowledge and sense may be either potential or actual. Thus Themistius, though we need not suppose, as Torstrick does, that he had ὡς or ὥσπερ καί or anything else but εἰς before τὰ πράγματα: 115, 15 H., 211, 27 Sp. τὰ ὄντα τοίνυν τὰ μὲν δυνάμει τὰ δὲ ἐνέργειᾳ, οὕτω δὲ καὶ ἡ ψυχὴ τὰ μὲν δυνάμει εἶδη ἔστί, τὰ δὲ ἐνέργειᾳ· ὅταν μὲν γὰρ ἔχῃ τὴν ἑξὺς τῆς αἰσθήσεως καὶ τοῦ νοῦ, μὴ ἐνεργῇ δέ, δυνάμει ἔστί τὰ ὄντα, ὅταν δὲ ἐνεργῇ ταῖς ἑξέσιν ἀμφοτέραις, ἐνέργειᾳ ἔστί τὰ ὄντα. That εἰς with τέμνεται should mean "according to," i.e. by the same divisions, as something else, has no exact parallel. In Plato, *Λατῶς* 738 d δὲ τῶν τετραράκοντα καὶ πεντακισχιλίων [int. ἀριθμός] εἰς τε πόλεμον καὶ ὅσα κατ' εἰρήνην πρὸς ἅπαντα τὰ ξυμβόλαια καὶ κοινωνήματα, εἰσφορῶν τε πέρι καὶ διανομών, οὐ πλείους μιᾶς δεουσῶν ἐξήκοντα δύναται ἂν τέμνεσθαι τομῶν, the exact meaning of εἰς is made clear by the following πρὸς: the number 5040 has 59 divisors suitable alike for war and the transactions and associations of peace. The sense of εἰς is more unmistakably final in *Pol.* 1330 a 11 καὶ τούτων ἑκάτεραν [int. ἀναγκαῖον] διηρῆσθαι δίχα πάλιν, τῆς μὲν κοινῆς τὸ μὲν ἕτερον μέρος εἰς τὰς πρὸς τοὺς θεοὺς λειτουργίας, τὸ δὲ ἕτερον εἰς τὴν τῶν συσσιτίων δαπάνην. In *Phys.* VII. 5, 250 a 17 εἰς γὰρ ἂν κινωίῃ τὸ πλοῖον, εἴπερ ἦ τε τῶν νεωλκῶν τέμνεται ἰσχύς εἰς τὸν ἀριθμὸν καὶ τὸ μῆκος, δὲ πάντες ἐκίνησαν, the construction is not different from εἰς δύο τέμνεται, as may be seen if εἰς ἑκατὸν be substituted for εἰς τὸν ἀριθμὸν. If the force employed in towing the vessel over a certain distance be the component of (say) 100 separate forces exerted by as many separate individuals, then, A. argues, it will follow that each single man moves the vessel, viz. one hundredth part of the distance. If, however, A. had written εἰς τοὺς νεωλκούς, as he very well might have done, in place of εἰς τὸν ἀριθμὸν, the expression would have closely approximated to that before us, τέμνεται εἰς τὰ πράγματα. With διαιρεῖν we find κατὰ similarly used, e.g. *Rhet.* I. 8, 1365 b 27 τὰ δὲ κύρια διήρηται κατὰ τὰς

πολιτείας· ὅσαι γὰρ αἱ πολιτεῖαι, τοσαῦτα καὶ τὰ κύρια ἔστω. In the *Politics* we have sometimes κατὰ and sometimes πρὸς with διαιρεῖν: 1299 b 18 πότερον κατὰ τὸ πρᾶγμα δεῖ διαιρεῖν [int. τὰς ἀρχὰς] ἢ κατὰ τοὺς ἀνθρώπους, λέγω δ' οἷον ἓνα τῆς εὐκοσμίας [int. πότερον ἐπιμελεῖσθαι δεῖ] ἢ παίδων ἄλλον καὶ γυναικῶν, 1300 b 6, 1329 a 41, 1298 b 11 διήρηται μὲν οὖν τὸ βουλευόμενον πρὸς τὰς πολιτείας, 1336 b 37 δύο δ' εἰσὶν ἡλικίας πρὸς αἷς ἀναγκαῖον διηρῆσθαι τὴν παιδείαν. It might also be suggested that in our present passage τέμνεται εἰς should be taken to mean "is distributed between" or "among." This meaning is expressed by μερίζειν with εἰς in *Pol.* 1265 b 3 διὰ τὸ μερίζεσθαι τὰς οὐσίας εἰς ὅποσον οὖν πλῆθος, 1321 b 37 ἐνιαχοῦ μὲν οὖν μερίζουσι καὶ ταύτην [int. τὴν ἀρχὴν] εἰς πλείους, ἔστι δὲ μία κύρια τούτων πάντων. Torstrik enquires: Cur τέμνειν dixit, non διαιρεῖν, quod in hac re solemne est? an propter Timaei τμήσιν? If there is a Platonic reminiscence, it is more likely to be of the divided line in *Rēp.* VI.: cf. 511 D, E καὶ μοι ἐπὶ τοῖς τέτταρσι τμήμασι τέτταρα ταῦτα παθήματα ἐν τῇ ψυχῇ γιγνόμενα λαβέ, νόησιν μὲν ἐπὶ τῷ ἀνωτάτῳ...καὶ τάξον αὐτὰ ἀνὰ λόγον.

b 25 τ' μὲν δυνάμει...26 εἰς τὰ ἐντελεχείᾳ. It is a delicate question whether we should follow the two best MSS. in reading δυνάμει...ἐντελεχείᾳ (cf. *Soph.* 138, 37), or give the preference to τὰ δυνάμει...τὰ ἐντελεχείᾳ, the text of the inferior MSS., which is supported by the weighty authority of *Them.* 115, 15 sq. H., 211, 27 sqq. Sp., *Simpl.* 281, 6—8, *Philop.* 567, 9—11. The expressions are equivalent and both are found in A., but his use of the abstract nouns in the plural is less frequent. It is quite clear that here the words governed by εἰς do not denote parts into which the whole is divided, but provinces to which the divisions of the whole are assigned or correspond, that in fact τέμνεται is no effective part of the predicate. Potential sense and potential knowledge are thus assigned to things potentially existent as their province, actual sense and actual knowledge to things actually existent. Cf. *Metaph.* 1087 a 15—19.

b 27. δυνάμει ταῦτ' ἔστι. "So the greater number of MSS. If ταῦτόν be read, it would seem better, with" the late "Prof. Chandler, to continue—τὸ μὲν ἐπιστητῶ, τὸ δὲ αἰσθητῶ" (*Wallace*, p. 283). Cf. *Them.* as cited above in *note* on 431 b 24 ὅταν μὲν γὰρ ἔχη τὴν ἔξιν τῆς αἰσθήσεως καὶ τοῦ νοῦ, μὴ ἐνεργῇ δέ, δυνάμει ἔστι τὰ ὄντα. See, e.g., 417 b 17 sqq., 429 b 5—9.

b 27. τὸ μὲν, i. q. τὸ ἐπιστημονικόν. τὸ δέ, i. q. τὸ αἰσθητικόν: chiasmus, since b 26 τὸ αἰσθητικόν preceded b 27 τὸ ἐπιστημονικόν.

b 28. ἀνάγκη δ' ἢ αὐτὰ ἢ τὰ εἶδη εἶναι. The subject is τὸ αἰσθητικόν καὶ τὸ ἐπιστημονικόν and the predicate αὐτὰ ἢ τὰ εἶδη, where by αὐτὰ must be understood αὐτὰ τὰ αἰσθητὰ and αὐτὰ τὰ ἐπιστητὰ respectively. Cf. *Philop.* 567, 25 νῦν φησιν ὅτι ἀνάγκη ἔστιν ἢ αὐτὰ τὰ σύνθετα εἶδη ἐν τῇ ψυχῇ εἶναι, τουτέστι μετὰ τῆς ὕλης καὶ τὸ εἶδος, ἢ αὐτὸ καθ' ἑαυτὸ τὸ εἶδος, *Simpl.* 281, 18 ἐὰν μὲν ἢ σύνθετος ἢ οὐσία ἢ ἐπιστητή, οὐκ ἔσται αὐτὴ ἐν τῇ ἐπιστήμῃ, ἀλλὰ τὸ εἶδος αὐτῆς. αὐτὰ μὲν δὴ...29 ἐν τῇ ψυχῇ. A.'s summary takes no account of the case where the thing known and its quiddity are identical, as in 429 b 12. The stone is a type of σύνθετος οὐσία. Cf. 410 a 10—13.

b 29. ἀλλὰ τὸ εἶδος. Cf. 429 a 27 τύπον εἰδῶν, *note* and 417 b 23: the universals, which are the content of knowledge, are in a manner in the soul itself. This correction probably renders precise the πῶς of b 21 and the advance which A. supposes he has made upon Empedocles.

432 a 2. ὄργανόν ἐστιν ὄργάνων. Cf. *Philop.* 567, 33 δ' λέγει τοιοῦτόν ἐστιν, ὅτι ὥσπερ ἡ χεὶρ ὄργανον οὐσα τοῦ σώματος ὄργανοις κέχρηται, οἷον σκεπάρνῳ, εἰ τύχοι, τέκτῳ, ἡ καλάμῳ, οὕτω καὶ ἡ ψυχὴ αὐτῇ εἶδος οὐσα ἄλλων εἰδῶν ἐστι δεκτικὴ, διότι τοὺς λόγους τῶν εἰδῶν ἔχει παρ' ἑαυτῇ. This is not the whole of what is implied in the simile. We use other instruments with the hand, but further the hand

itself shapes the instruments it uses. Cf. *De Part. An.* IV. 10, 687 a 7—23, of which I cite (a 19) ἡ δὲ χεὶρ ἔοικεν εἶναι οὐχ ἐν ὄργανον ἀλλὰ πολλά· ἔστι γὰρ ὥσπερ ὄργανον πρὸ ὀργάνων. Anaxagoras had said that man is the most rational being because he has hands. Aristotle replies that man has hands because he is the most rational being, for the instrument must be adapted to its function, not the function to the instrument. The choice of the instrument is after all determined by the end in view, and the hand is so ingeniously contrived for various purposes that it takes the place of all other tools. Nature, who gives to each animal the instruments it can use, has given man hands because he has the intelligence to use them. In *Problems* XXX. 5 the question proposed is why we learn more quickly in youth, but have greater powers of mind in mature life. The solution begins by stating that we have two instruments in ourselves with which to make use of external instruments, and these are, in the body, the hand and, in the soul, νοῦς: (955 b 23) ὁ θεὸς ὄργανα ἐν ἑαυτοῖς ἡμῖν δέδωκε δύο, ἐν οἷς χρῆσόμεθα τοῖς ἐκτὸς ὀργάνοις, σώματι μὲν χεῖρα, ψυχῇ δὲ νοῦν. For intelligence is, as it were, a natural instrument in us, as distinct from the sciences and arts, which are instruments made by ourselves: (ib. b 25) ἔστι γὰρ καὶ ὁ νοῦς τῶν φύσει ἐν ἡμῖν ὥσπερ ὄργανον ὑπάρχων· αἱ δὲ ἄλλαι ἐπιστῆμαι καὶ τέχναι τῶν ὑφ' ἡμῶν ποιητῶν εἰσίν, ὁ δὲ νοῦς τῶν φύσει... (b 36) ἔστι γὰρ νοῦ μὲν ὄργανον ἐπιστήμη (τούτῳ γὰρ ἐστὶ χρήσιμος, καθάπερ αὐλοὶ αὐλητῇ), χειρῶν δὲ [int. ὄργανα] πολλὰ τῶν φύσει ὄντων. The writer of this problem, who has made use of the passage in *De Part. An.* above referred to, may be putting his own construction on the simile of our text, but at any rate he is right in saying that the arts and sciences are useless without intelligence to apprehend and, as it were, hold them.

a 2. καὶ ὁ νοῦς εἶδος εἰδῶν. Bywater (*Journ. of Phil.* XVII., p. 63) thinks that νοητῶν must have dropped out after εἰδῶν. "In the expression εἶδος εἰδῶν the word εἰδῶν does not mean 'forms' generally—it seems to mean par excellence the νοητὰ εἶδη; but this is not the sense it bears in the immediate context, where we have two instances of the use of the word in the more general sense of 'form,' one just before this passage (431 b 29), the other two lines further on (432 a 5 ἐν τοῖς εἶδει τοῖς αἰσθητοῖς τὰ νοητὰ [scil. εἶδη] ἐστίν." Elsewhere the special meaning of εἶδος = εἶδος νοητῶν is without ambiguity in the context where it occurs, e.g. 429 a 15, 28, 431 b 2.

a 3 ἐπεὶ δὲ οὐδὲ πρᾶγμα... ὁ ἕξαις καὶ πάθη. Join κεχωρισμένον with πρᾶγμα and τὰ αἰσθητὰ with μεγέθη. The absence of a proper punctuation placed the ancient reader at a great disadvantage, as A. remarks *Rhet.* III. 5, 1407 b 12—18, but the comments of Philop. 568, 10 sqq. and Simpl. 284, 13—22 are astonishing. Simpl. was right in taking κεχωρισμένον with πρᾶγμα, though the transposition which he proposes for this purpose is unnecessary; but he failed to see that τὰ αἰσθητὰ goes with τὰ μεγέθη, and took ὡς δοκεῖ τὰ αἰσθητὰ together. Them. alone understood the construction: 115, 35 H., 212, 26 Sp. οὐδὲν εἶναι πρᾶγμα δοκεῖ παρὰ τὰ μεγέθη τὰ αἰσθητὰ κεχωρισμένον. The judgment of Simpl. was no doubt biased by philosophic anxiety to vindicate the existence of κεχωρισμένον τι τοῦ μεγέθους (431 b 18 sq.). He overlooked the qualification ὡς δοκεῖ, by the use of which A. abstains from committing himself. Alex. Aphr. recognised one exception to the universality of this statement, viz. τὰ κινητὰ τοῦ οὐρανοῦ εἶδη, χωριστὰ ὄντα (apud Simpl. 284, 23 sqq.). Simpl. himself goes further: 283, 36 ὁ νοῦς τὰ εἶδη ἐν τοῖς αἰσθητοῖς καὶ φανταστοῖς νοεῖ, οὐχ ἀπλῶς ἅπαντα (οὐ γὰρ καὶ τὰ ἄνυλα)... (285, 1) καὶ ὅπερ διὰ τοῦ δοκεῖν πρότερον ἐνεδείξατο, ἐναργέστερον νῦν σαφηνίζει ἀφορίζων, τίνα κατ' ἀλήθειαν αἰσθητὰ, ἃ οὐκ ἔστι παρὰ τὰ μεγέθη, ὧν καὶ τὰ νοητὰ ἐν τοῖς αἰσθητοῖς καὶ φανταστοῖς ἐστὶν εἶδεσι.

a 6. τῶν αἰσθητῶν. These words might conceivably go with ὅσα, but it makes a better sense if we take them with ἔξεις καὶ πάθη. Cf. *Metaph.* 983 b 13—16, 1001 b 29—1002 a 2, 1015 b 28—34, 1020 a 17—22, 1061 a 7—10, *De Gen. et Corr.* I. 10, 327 b 15—17, *De Mem.* 2, 451 a 21—28. These passages show that the accidents which are predicated of substance and are supposed to inhere in it are often referred to comprehensively as ἔξεις, πάθη or διαθέσεις, when they are contrasted with substance itself.

a 7 καὶ διὰ τοῦτο...8 οὐδὲ ξυνίει. The reason why the defect of a sense necessarily implies a corresponding defect of knowledge is clearly stated *Anal. Post.* I. 18. Induction and demonstration are the only roads to knowledge, and both are closed in the case assumed, induction from particulars being impossible without sense-perception, *Anal. Post.* I. 18, 81 b 5 ἐπαχθῆναι δὲ μὴ ἔχοντας αἰσθεῖσθαι ἀδύνατον. τῶν γὰρ καθ' ἕκαστον ἡ αἰσθησις, while the ultimate major premiss from which a demonstration starts involves an apprehension of universals, for which induction, and therefore sense-perception, will be again necessary: *ib.* 81 a 40 ἔστι δ' ἡ μὲν ἀπόδειξις ἐκ τῶν καθόλου...ἀδύνατον δὲ τὰ καθόλου θεωρῆσαι μὴ δι' ἐπαγωγῆς. The failure of a single sense cuts us off, not only from all the particulars of a given kind, but from the universals which the intellect might under other circumstances discern to be latent in those particulars and disentangle from them. Torstrik followed Bekker in restoring ξυνίει which, as heard, owing to itacism, no scribe could discriminate from ξυνίει. His note is: quum aoristo opus sit, ex Bekkeri coniecturâ sic scripsi, non ξυνίει: si ista coniectura est vocanda: nam libri LP [now styled y] S praebent ξυνίει. Cf. *Eth. Nic.* 1179 b 27, where two MSS. give, the one συνίει, the other συνίησιν, in place of συνίει. As to the appropriateness of the verb used, from *Eth. Nic.* 1143 a 11—18 it would appear that the special meaning of συνιέναι is to understand what is said to one, and that by means of knowledge which one already possesses, while from *Top.* IX. 3, 165 b 32 it appears that μανθάνειν itself might bear this meaning as well as the more obvious meaning of acquiring fresh knowledge. Thus under the disabilities imposed by the defect of a sense we can neither learn for ourselves nor be instructed by the conversation of a teacher.

a 8. ἅμα φαντάσματος, i.e. οὐκ ἄνευ φαντάσματος. Here again our authorities differ (see critical notes), E being supported by Them. 116, 8 H., 213, 10 sq. Sp. and Philop. 569, 5 sq. against inferior MSS. and Simpl. 284, 13. Mistake was inevitable if the archetype resembled, let us say, the papyrus in which the Ἀθηναίων Πολιτεία has been preserved. It was repeated apparently by the scribes of Philoponus: 569, 5 ἐπαναγκές ἐστι τὸν νοῦν ἅμα φάντασμά τι θεωρεῖν, τουτέστιν ὀργάνῳ τῇ φαντασίᾳ <κεκρῆσθαι>...(7) διὰ τούτων...λέγει ὅτι ὁ νοῦς ἅμα φαντασίᾳ ἐνεργεῖ, where ἅμα φαντασίᾳ makes it quite clear that Philop. intended φαντάσματος and not φάντασμά τι.

a 10. πλὴν ἄνευ ὕλης. This qualification must be understood even where, as in 431 a 15, it is not expressed. Compare 431 b 2—5. We must remember that by the definition 428 b 30—429 a 2 (cf. 428 b 10—30) imaginations are impressions of present sensations, or of past sensations resembling present sensations, except in so far as their matter is not present. Indeed, A. is careful to point out that one species of φάντασμα, viz. memory, is not infrequently mistaken for a present sensation, *De Mem.* I, 451 a 2—12.

a 10. ἕτερον φάσεως καὶ ἀποφάσεως. As here used, φάσις=κατάφασις, an affirmation, τὶ κατὰ τινος: cf. note on 430 b 26.

a 11 συμπλοκή γάρ...12 ψεύδος. See on 430 a 27, where the term is not συμπλοκή, but σύνθεσις.



a 12 τὰ δὲ πρῶτα...13 ἀνευ φαντασμάτων. The question is put whether τὰ πρῶτα νοήματα are anything distinct from images of sense, and it is clearly answered in the affirmative. If we adhere to the traditional text, it would seem as if the answer implied some sort of inference: οὐδὲ τὰλλα, *ergo* ne haec quidem. No explanation, then, of the text will be satisfactory unless (1) τὰ πρῶτα are opposed to τὰ ἄλλα, and unless (2) the sense given to τὰ πρῶτα is such that, when the conformity of τὰ ἄλλα νοήματα to the law previously laid down (431 a 16) that the mind never thinks without an image is admitted, the conformity of τὰ πρῶτα νοήματα to the same law follows as a matter of course, and the suspicion entertained about them vanishes. If, on the other hand, we alter τὰλλα to ταῦτα or interpret τὰ ἄλλα as meaning τὰ πρῶτα, we make A. allay the suspicion to which he has just given utterance by a mere *ipse dixit* without reason assigned. The above-mentioned conditions will be satisfied if we take πρῶτα to mean ἀπλᾶ, i.e. ἀσύνθετα. It will then follow that τὰ ἄλλα=τὰ σύνθετα, i.e. the notions employed by discursive thought in dealing with τὸ ὄν ὡς ἀληθές and τὸ μὴ ὄν ὡς ψεῦδος, the region in which, as we have just been reminded, there is συμπλοκή (or σύνθεσις) νοημάτων ὥσπερ ἐν ὄντων (430 a 27 sq.). In other words, all νοήματα are either (α) πρῶτα καὶ ἀπλᾶ or (β) συμπλοκαὶ νοημάτων πρῶτων καὶ ἀπλῶν, judgments, whether implicit or explicit. I assume that A. regards (β) as the more familiar case and that here the truth of the proposition "The notion is something distinct from the image which is indispensable to it" is more easily recognised. Cf. Them. 116, 10 sq. H., 213, 12—14 Sp. cited below. In every logical judgment and in every compound notion capable of further analysis the part played by νόημα and φάντασμα is recognised as distinct. Cf. Them. 116, 18 H., 213, 24 Sp. οὐ γὰρ ταῦτόν τό τε νόημα τὸ ἀπὸ τοῦ Σωκράτους καὶ ἡ φαντασία, ἀλλὰ τὰ μὲν φαντάσματα τύπος τις καὶ ἔχνος αἰσθήσεως καὶ ὥσπερ πείσις, εἴ μοι τὴν πείσιν νοοῖς ὡς πολλάκις προειρήκαμεν, τὸ νόημα δὲ ἐνέργεια τοῦ νοῦ περὶ τὸ φάντασμα ὑποκείμενον. ταύτη τοι καὶ ποικίλως αὐτῷ [the word νόημα] χρῆται καὶ ταῖς πτώσεσιν ἐξαλλάττων καὶ τοῖς ἄρθροις. If in the judgment or the compound notion capable of further analysis there is both νόημα and φάντασμα which are quite distinct; and if, further, the judgment and the compound notion are nothing but συμπλοκαὶ νοημάτων πρῶτων καὶ ἀπλῶν, it follows that these two are present as distinct in that στοιχείον of discursive thought, the πρῶτον νόημα. For, if we resolve πρῶτα νοήματα into φαντάσματα and nothing else, we ought in consistency to find nothing but φαντάσματα in the products of such πρῶτα νοήματα, i.e. in judgments and in compound notions capable of analysis. On this view of the passage it becomes superfluous to determine whether τὰ πρῶτα are the highest notions, as Trend. supposes (τὰ πρῶτα νοήματα, ut πρῶτοι ἀριθμοί, ea esse videntur, a quibus reliquae veritatem repetunt) or the first results of abstraction, as Torst. holds: τὸ πρῶτον νόημα est prima abstractio, quae fit ubi a repraesentatione (τῷ φαντάσματι) eius quod τῷ ἀριθμῷ individuum est (ὁ τις ἄνθρωπος) transimus ad id quod τῷ εἶδει individuum est (ὁ ἄνθρωπος): quod discrimen potest rudius rem quemque latere. They need not invariably be, what Simpl. calls them, quiddities: 286, 2 πρῶτα καλῶν τὰ τῶν οὐσιῶν αὐτῶν γνωστικά καὶ μάλιστα τὰ τῶν αὐλῶν εἰδῶν. From *Anal. Post.* II., c. 19 we should certainly infer that in our experience the lower universals are formed first, the higher and the highest of all afterwards, for thought can separate as well as combine. A notion can be simple and uncompounded in the logical sense without being indivisible. Cf. 430 a 26—b 6 and *Metaph.* Θ., c. 10.

Others take the opposite view, according to which the question is sufficiently answered by the mere reassertion that images are indispensable to τὰ πρῶτα

νοήματα. Torstrik substituted ταῦτα for ἄλλα, a change approved by Freudenthal. Torstrik's critical note is: ταῦτα scripsi ex Them. The reading ταῦτα is presented by all the MSS. of Them. (116, 18), but the latest editor of Them., Heinze (not Hayduck, as is incorrectly printed in my critical notes), is obviously not convinced that the paraphrase as a whole justifies the word ταῦτα, for, against the authority of all the MSS. of Them., he has replaced it by ἄλλα. Cf. Them. 116, 10 H., 213, 12 Sp. ἐστὶ δὲ τὰ μὲν κατὰ συμπλοκὴν λεγόμενα καὶ νοούμενα φανερώς ἕτερα τῶν φαντασμάτων. After illustrating this by examples, Them. resumes: 116, 15 H., 213, 19 Sp. καὶ αὗται πᾶσαι αἱ συμπλοκαὶ διαφέρουσιν ἀλλήλων τε καὶ τῶν φαντασμάτων, from which it may be argued that in the opinion of Them. the difference between imagining and thinking was more evident for the judgment than for the single notion. Nor is there any gain to the sense by reading ταῦτα, however the word be interpreted. Torst., as above noted, interprets it as the lowest universals, i.e. the least removed from sense, like the πρῶτον καθόλου of *Anal. Post.* II. 19, 100 a 15—b 3. By A.'s own doctrine, he says, that αἰσθητὰ εἶδη are in sensible things and νοητὰ εἶδη in the forms of sensible things, thinking is made to depend upon sensation and sensation upon the sensible thing. But this doctrine can be perverted into a denial that there is any thinking at all, as distinct from imagining: and the less remote notions are from sensations, the more plausible will be the perversion. Here, if anywhere, there would be a confusion between thought and image. Freudenthal also supports ταῦτα, though by τὰ πρῶτα νοήματα he understands, not with Torstrik the lowest universals, but, as I think rightly, simple, isolated, uncompounded notions, "unverknüpfte Begriffe." He thinks that, if A. meant solely the most general notions, like Unity, Being, he would not have raised the question, since such notions are least liable to be confounded with images. The activity of thought, we must repeat from 430 a 27—b 6, is shown both in combining and in separating. The judgment is a whole, a unity which the mind has made out of simpler elements, precisely as it can frame one φάντασμα out of several, 434 a 9 sq. But it can also separate and analyse, and its powerful solvent can be applied to those apparently simple unities, the quiddities, resolving man into biped animal etc., and converting simple apprehension of a quality, e.g. colour, into an assertion respecting it, τὴ κατὰ τινος.

## CHAPTER IX.

From the discriminating faculties of sense and intellect, which have mainly occupied us from II., c. 5—III., c. 8 inclusive, we now pass to the faculty of locomotion which occupies III., cc. 9—II. The reason why intellect was taken first has been explained in the opening remarks on III., c. 4.

**432 a 15—b 7.** Of the two principal characteristics of the soul of animals we may dismiss the one, the discriminating faculty, now that sense and intellect have been determined, and turn to the latter, the power of local movement. We have to determine whether this power (1) belongs to the whole soul or (2) to a special part, and if it belongs to a special part, whether this special part has already been brought under our notice [§ 1]. This suggests the further enquiry, in what sense we can speak of "parts" of the soul. How many such parts should be recognised? From one point of view the parts of the soul are very numerous and the ordinary distinctions of rational and irrational soul, or of reason, spirit and appetite, are inadequate. If we look

to the differences on which such divisions are based, there is much more to be said for the classification adopted in this treatise. The distinction between our nutritive, sensitive, imaginative and appetitive faculties rests on wider and more fundamental differences; e.g. nutrition and growth belong to plants as well as to animals. Sensation cannot rightly be classed as either rational or irrational [§ 2]. Imagination is logically distinct from all the other faculties, whether it is locally separate or not. Appetency, again, stands apart. In the rational soul we find it appear as wish, in the irrational as anger and desire. If the soul be divided into three parts, appetency is found in each [§ 3].

In this digression A. returns once more to criticise the views of his predecessors, in particular the Platonic tripartite division of the soul, for which see *note* on 411 b 5.

432 a 15. ἐπεὶ δὲ ἡ ψυχὴ...τῶν ζώων. Cf. the very similar opening of III., c. 3, 427 a 17—19. The soul of animals, as distinguished from plants, has been defined by two faculties or powers: a reference probably to 413 a 20—b 13. In that passage, after τὸ ἄψυχον had been separated from τὸ ἐμψυχον by the absence of growth, nutrition and decay, and the animal parted off from the plant by the minimum endowment of at least one sense, viz. touch, the conclusion is established that soul is determined by the principles of nutrition, sensation, understanding and motion, 413 b 11 ἡ ψυχὴ...τοῖς ὄρεσται, θρεπτικῷ, αἰσθητικῷ, διανοητικῷ, κίνησει. Our present statement is limited to the soul of animals ἡ τῶν ζώων, and therefore θρεπτικόν, which plants share with animals, is not regarded as a defining attribute of the animal, and, as we shall soon see, τὸ κριτικόν combines under one τὸ αἰσθητικόν and τὸ διανοητικόν. Moreover, stationary animals, like the zoophytes, to which attention was drawn in 413 b 2 sqq., are overlooked here, though they reappear later in this chapter 432 b 19 sqq., so that this more general statement of A.'s formula lacks somewhat of precision. As it stands, it bears a striking likeness to the summary of the views of his predecessors, or rather to the current ἔνδοξον on the subject, which A. gives in 403 b 25 sqq., repeated with modifications in 405 b 11 sqq. and in 409 b 19 sqq., 410 b 16 sqq. Hence Philoponus (570, 12) is disposed to see in our passage a direct reference to the views of former thinkers: εἰ μεμνήμεθα, κατ' ἀρχὰς τῆς παρουσίας ἐλέγετο πραγματείας ὅτι πάντες οἱ φυσικοὶ δύο τοῖς ὄρεσται τὴν ψυχὴν, τῷ δὲ γνωστικῷ καὶ τῷ κατὰ τόπον κινητικῷ· πρὸς ταῦτα γὰρ ἀπείδον. καὶ ἀπεδέχετο μὲν αὐτοὺς, διότι ἀπὸ τῶν ἐνεργειῶν τὴν οὐσίαν τῆς ψυχῆς ἐθήρευον. It is not, however, to their crude views, but rather to A.'s own restatement of so much of them as he accepts, that ὄρεσται refers.

a 16. τῷ τε κριτικῷ. See *notes* on κρίνειν 426 b 10, 427 a 18. Sense implies judgment or discrimination of sensibles 418 a 14, 422 a 21, 424 a 5 sq., 426 b 10 sqq., 429 b 14—16, 431 a 20. The same function belongs to imagination 428 a 1 sqq., cf. *De Incomm.* 2, 460 b 17. Hence the author of *De Motu Anim.* 6, 700 b 17 ὁρῶμεν δὲ τὰ κινούμενα τὸ ζῶον διάνοιαν καὶ φαντασίαν καὶ προαίρεσιν καὶ βούλησιν καὶ ἐπιθυμίαν. ταῦτα δὲ πάντα ἀνάγεται εἰς νοῦν καὶ ὄρεξιν. καὶ γὰρ ἡ φαντασία καὶ ἡ αἰσθησις τὴν αὐτὴν τῷ νῷ χώραν ἔχουσιν· κριτικὰ γὰρ πάντα.

a 17. κινεῖν τὴν κατὰ τόπον κίνησιν. For the accusative see *notes* on 406 a 31, 410 b 20: cf. *infra* b 9 sq., b 14, *De Caelo* III. 8, 307 a 5 sq. ἀλλ' οὐ τὴν τοῦ πυρὸς κίνησιν εὐκίνητα.

a 19 πότερον ἔν τι...20 ψυχῇ. The possibilities considered imply three dichotomies. Locomotion is due (a) to a part, or (b) to the whole, of the soul. If to a part, such part may be (c) in magnitude, i.e. spatially, or (d) in thought and logically, separate and distinct. Again, it may be a part (e) not hitherto considered, to which this function is peculiar, or (f) identical with one of

those already discussed. Cf. 411 a 30—b 5 (especially b 1 *πάση...2 κινούμεθα*), 413 b 13 sqq., 429 a 11 sq., *Eth. Nic.* 1102 a 28—32.

a 20. *ἡ μεγέθει ἡ λόγῳ*. See *notes* on 413 b 13 and 429 a 12: cf. 433 b 24 *λόγῳ μὲν ἕτερα ὄντα, μεγέθει δ' ἀχώριστα*.

a 21. *κἂν εἰ*. See *note* on 422 a 11.

a 21 *ἴδιόν τι παρὰ τὰ...22 εἰρημένα*. Are we to assume a separate "part," τὸ κατὰ τόπον κινήτικόν, as was done provisionally or by implication 410 b 16—21, 411 b 22, 413 a 23 sq., b 21 sq., 414 a 32, b 17, 415 a 7, b 21—23? The Greek commentators distinguish τὰ εἰωθότα λέγεσθαι from τὰ εἰρημένα, referring the former to the Platonic tripartite division, Them. 116, 31 sq. H., 214, 15—17 Sp., Simpl. 287, 27—31, Philop. 573, 21 sq., and understanding by εἰρημένα the faculties previously recognised by A. himself, Simpl. 287, 25 sq., Philop. 573, 22—24. But there seems no ground for thus limiting the meaning of λέγεσθαι and εἰρημένα, since A. throughout has adopted terms in current use, though endeavouring to make them more precise than his predecessors had done. The reference is probably quite general. Cf. a 28 *infra*.

a 22. *ἡ τούτων ἐν τι*, e.g. τὸ ὁρεκτικόν, which was proved to belong to everything which has sensation in 414 b 1—15. *ἔχει δὲ ἀπορίαν εὐθὺς*. The precise form in which the simple enquiry "What is it in the soul which imparts spatial motion?" has just been elaborated introduces a digression, 432 a 22—b 7, upon the old question in what sense we can speak of parts or faculties of the soul. Cf. 402 b 1—11, 413 b 13—16 and 414 b 20—415 a 13. It should be remembered that, in spite of his numerous cautions and explanations, A. has persistently used μόριον for nearly all his faculties, even when the term seems most inappropriate, e.g. 429 a 10 of νοῦς, 413 b 7, b 27. In fact, by keeping this an open question, A. considers himself entitled to use indifferently the terms μόριον, ἀρχή, δύναμις and διαφορά throughout.

a 24. *ἄπειρα*. Trend. (p. 441): Si animum partiri velis, partes sunt quasi infinitae; adeo varius est et uberrimus actionum fons, ut, quoniam singula quaeque quasi partes tenere licet, infinitae sint partes, Them. 117, 6 H., 215, 3 Sp. *σχεδὸν γὰρ οὐκ εὐαριθμητα φαίνεται τὰ μέρη τῆς ψυχῆς, εἰ τοιαύτας λαμβάνοις τις τὰς διαφοράς, αἷς τὸν θυμὸν καὶ τὴν ἐπιθυμίαν καὶ τὸν λογισμὸν χωρίζουσι. καὶ οὐ μόνον...25 ἐπιθυμητικόν*. See again *note* on 411 b 5.

a 26. *τὸ λόγον ἔχον καὶ τὸ ἄλογον*. This division is directly attributed to Plato by the author of the *Magna Moralia* I. 1, 1182 a 23 *μετὰ ταῦτα δὲ Πλάτων διείλετο τὴν ψυχὴν εἰς τε τὸ λόγον ἔχον καὶ εἰς τὸ ἄλογον ὁρθῶς, καὶ ἀπέδωκεν ἐκάστῳ ἀρετὰς προσήκουσας*: and *Timaeus* 69 C sqq., where ἀρχὴ ψυχῆς ἀθάνατος, τὸ θεῖον, is distinguished from ἄλλο ψυχῆς εἶδος τὸ θνητόν, proves the dichotomy to have been the basis of Plato's tripartite division. But more probably the division was current long before Plato's time, and A. himself uses it as a popular opinion in *Eth. Nic.* 1102 a 26 *λέγεται δὲ περὶ αὐτῆς καὶ ἐν τοῖς ἑξωτερικοῖς λόγοις ἀρκοῦντως ἔνια, καὶ χρηστὸν αὐτοῖς. οἶον τὸ μὲν ἄλογον αὐτῆς εἶναι, τὸ δὲ λόγον ἔχον*, where it serves as a basis for the distinction between ἠθικὴ and διανοητικὴ ἀρετῇ, an application of popular psychology in a popular treatise. Cf. H. Diels, *Ueber die exoterischen Reden des Aristoteles in Monatsbericht der Berl. Akad.* 1883, pp. 483 sqq.

a 26 *κατὰ γὰρ τὰς διαφοράς...28 τούτων*. The error here censured is a logical error. What is required is a scientific classification in which the various classes and sub-classes do not overlap and are marked off from each other by essential distinctions. When tested by the rules laid down in the *Analytics*, the classifications of previous philosophers are faulty, and A.'s own classification as given in this treatise, if not ideally perfect, is far superior to the rest.

a 28. καὶ νῦν, i.e. in the present treatise: καί, "as a matter of fact," emphasises εἴρηται, cf. 424 b 24 sq. For νῦν=νυνδὴ cf. *Phys.* VIII. 3, 253 b 5 νῦν ῥηθέντος, *ib.* 254 a 17 νῦν διορισθέντων.

a 29 τὸ τε θρεπτικόν...30 καὶ τὸ αἰσθητικόν. These nominatives take up a 27 καὶ ἄλλα...μόρια, "namely, the nutritive part and the sensitive part." The omission of these "parts" is the most striking defect of the Platonic tripartition, a defect to be explained by the purpose which Plato had in view, and his divergent conception of the soul, which in the *Republic* and in most of the *Timaeus* means the human soul.

a 31. τὸ φανταστικόν. The position of imagination in A.'s scheme has never been cleared up. Images are results of sensations, but distinct from them, 428 b 11 sq.; but they serve as materials for thought, 431 a 14—15, b 2—5, 432 a 8—14. If it is not a distinct faculty, except from the logical aspect, should it go with sense or reason? In *De Mem.* I, 450 a 10—14 it is by implication classed with sense, but with the qualification that it is *per accidens* related to thought. Cf. 429 a 4—8, 433 a 10, 432 b 29 sqq.

432 b 1. τῷ μὲν εἶναι πάντων ἕτερον. Cf. 413 b 29 τῷ λόγῳ ὅτι ἕτερα, φανερόν· αἰσθητικῷ γὰρ εἶναι καὶ δοξαστικῷ ἕτερον, εἴπερ καὶ τὸ αἰσθάνεσθαι τοῦ δοξάζειν. Similarly here τὸ φανταστικῷ εἶναι is not the same as τὸ αἰσθητικῷ εἶναι, τὸ νοητικῷ εἶναι or τὸ δοξαστικῷ εἶναι because, as was shown in detail 428 a 5—24, φαντασία itself is not the same as αἴσθησις nor the same as νοῦς nor the same as δόξα. τούτων, probably, like πάντων, the parts or functions assumed to be separate, quite generally, whatever they are. In a 27, 28 *supra* the pronoun no doubt refers to Plato's three parts or the division into rational and irrational. But there is no need to restrict the meaning here, any more than in a 22 *supra*.

b 3. ὁ καὶ λόγῳ καὶ δυνάμει ἕτερον. It is logically distinct, and its functions, i.e. the activities which are the basis for assuming such a faculty, are also distinct. Cf. *Simpl.* 290, 38 τὸ γὰρ ὀρεκτικὸν ἐναργῶς τῷ λόγῳ ἐστὶν ἕτερον, ὥς καὶ ἡ ἐνέργεια αὐτοῦ δηλοῖ καὶ ἡ τῶν ἐνεργειῶν ἀποδοτικὴ δύναμις· διὸ καὶ πρόσκειται τῷ λόγῳ ἡ δύναμις, *Them.* 117, 17—19 H., 215, 20—22 Sp.

b 4. καὶ ἄτοπον δὴ. A. contends that appetency is a part or faculty distinct from all the foregoing. Hence a further defect in the current classifications. If you begin with rational, irrational, you must include appetency under both (ἄτοπον...b 6 ὁ θυμός). If you prefer the tripartition, you have appetency in each of your three main divisions (b 6 εἰ δὲ τρία...7 ὁρεξίς). The defect in classification here noted may be illustrated from the classification of animals. The infimae species have certain characteristics, *notae*, διαφοραί, and by dichotomy we cannot reach these marks, *De Part. An.* I. 3, 643 a 16 φανερόν τοίνυν ὅτι οὐκ ἔστι λαβεῖν τὰ ἄτομα εἶδη ὡς διαιροῦνται οἱ εἰς δύο διαιροῦντες τὰ ζῷα ἢ καὶ ἄλλο ὀντινὸν γένος. If, e.g., we start with land animals and water animals, we shall have the same groups of characteristics on both sides of the dividing line, land fowl and water fowl, land reptiles and water reptiles and so on. The important genera ζῷα, ὄντινες will be split up.

b 5. τὸ τοῦτο διασπᾶν. The verb διασπᾶν, to tear asunder, is usually applied to a whole which is split up or divided into parts, e.g. ὁ ἀὴρ διασπώμενος 411 a 20, 416 a 7. Cf. *De Part. An.* I. 2, 642 b 10 ἔτι δὲ προσήκει μὴ διασπᾶν ἕκαστον γένος, οἷον τοὺς ὄρνιθας τοὺς μὲν ἐν τῇδε τοὺς δ' ἐν ἄλλῃ διαιρέσει... b 16 εἴπερ οὖν μηδὲν τῶν ὁμογενῶν διασπαστέον, ἢ εἰς δύο διαίρεσις μάταιος ἂν εἴη· οὕτως γὰρ διαιροῦντας ἀναγκαῖον χωρίζειν καὶ διασπᾶν· τῶν πολυπόδων γὰρ ἐστὶ τὰ μὲν ἐν τοῖς πεζοῖς τὰ δ' ἐν τοῖς ἐνύδροις. So *Themistius* 117, 19 H., 215, 23 Sp. καὶ γὰρ ἄτοπον ἴσως τὸ διασπᾶν ταύτην τὴν δύναμιν καὶ τιθέναι αὐτὴν καὶ ἐν τῷ λόγον ἔχοντι καὶ ἐν τῷ ἀλόγῳ, καὶ μὴ ποιῆν καὶ ταύτην χωρὶς ὥσπερ ἐκείνων

ἕκαστον. But the splitting of the whole into parts implies the severance of one part from the rest. Cf. *Rhet.* II. 8, 1386 a 10 τὸ διασπᾶσθαι ἀπὸ φίλων καὶ συνήθων ἐλεεινόν. It is in this way that Simplicius takes διασπᾶν here: 291, 5 ἄποπον οὖν καλῶς ἀποφαίνεται τὸ διασπᾶν τὸ ὀρεκτικὸν ἀπὸ τῶν ἄλλων.

b 5. ἡ βούλησις. In the present discussion, cc. 9—11, this term signifies rational wish, desire for the good, ὁρεῖσις τις, viz. ὁρεῖσις λογιστική. With this agrees the summary of *Rhet.* I. 10, 1368 b 37 καὶ ὧν αὐτοὶ αἵτιοι, τὰ μὲν δι' ἔθος τὰ δὲ δι' ὄρεξιν τὰ μὲν διὰ λογιστικὴν ὄρεξιν τὰ δὲ δι' ἄλογον· ἔστιν δ' ἡ μὲν βούλησις ἀγαθὸν ὄρεξις· οὐδεὶς γὰρ βούλεται ἀλλ' ἢ ὅταν οἰήθῃ εἶναι ἀγαθόν, ἄλογοι δ' ὀρέξεσις ὁρμή καὶ ἐπιθυμία: also *Eth. Nic.* 1111 b 19 sqq., *Pol.* 1334 b 22 θυμὸς γὰρ καὶ βούλησις, ἔτι δὲ καὶ ἐπιθυμία καὶ γενομένοις εὐθὺς ὑπάρχει τοῖς παιδίοις, ὁ δὲ λογισμὸς καὶ ὁ νοῦς προοῖσιν ἐγγίνεσθαι πέφυκεν. Like every form of ὄρεξις, βούλησις will appear before the rational faculty is fully matured.

b 6. καὶ ἐν τῷ ἀλόγῳ...θυμός. Cf. *Eth. Nic.* 1102 b 30 τὸ δ' ἐπιθυμητικὸν καὶ ὅλων ὀρεκτικὸν μετέχει πως [int. τοῦ λόγου], ἢ κατ' ἡκόν ἐστιν αὐτοῦ καὶ πειθαρχικόν. εἰ δὲ τρία...7 ὄρεξις. If, like Plato, we recognise three, not two, parts of the soul, appetency is in all three. Cf. 414 b 2.

**432 b 7—433 a 8.** To return to the question before us. The power of local movement must be kept distinct from the processes of growth and decay common to all animals and originating in the nutritive faculty; and, further, from the processes of respiration and expiration, of sleep and waking, which from their obscurity call for separate treatment (viz. in the *Parva Naturalia*) [§ 4]. What is it, then, that communicates to the animal local movement, or, more precisely, movement of progression? It is not (1) the nutritive faculty, for animal locomotion is always directed to an end and has either imagination or appetency for its concomitant. When not under compulsion, the animal moves only in order to seek or to avoid something. Again, if local motion were due to the nutritive faculty, plants as well as animals would have organs of locomotion [§ 5]. Nor is it (2) the sensitive faculty, for this view is disproved by the existence of stationary animals, possessed of sensation, which are at the same time neither mutilated nor imperfect. If the locomotive and sensitive faculties were identical, such animals would possess organs of progression [§ 6]. Nor is it (3) the reasoning faculty or intellect. The speculative intellect has nothing practical for its object. None of its assertions concern pursuit or avoidance. And even when intellect speculates on practical questions it does not prompt pursuit or avoidance, e.g. an imagination may be terrible or agreeable, may make the heart beat or the mouth water, without the least suggestion of progressive movement [§ 7]. Lastly, when the practical intellect enjoins avoidance or pursuit, it is liable to be thwarted by desire, i.e. appetite, as in the case of the incontinent man. And, generally, art or science alone is not sufficient to ensure scientific production or action. Something else is requisite. But again it is not (4) appetency alone which produces this local motion; witness the continent man who thwarts his inclinations and obeys reason [§ 8].

432 b 7. καὶ δὴ καλ. Resumptive particles after the digression.

b 8. τὴν μὲν γὰρ. By γὰρ A. shows that he is restricting the enquiry to locomotion, or, as he more precisely expresses it below b 14, ἡ πορευτική κίνησις. It is not the movement of growth and decay with which we are concerned, though that also in a sense goes on in space, as was explained in the *note* on 406 a 16. If it were, the nutritive faculty would be a sufficient cause. But A., having put the question as to what causes motion in space, deals parenthetically, as it were, b 8—13, with certain kinds of spatial motion due to soul other than

ἡ πορευτικὴ κίνησις. Cf. *Phys.* VIII. 2, 253 a 14 αὐτὸ δὲ φάμεν [int. τὸ ζῶον] ἐαυτὸ κινεῖν οὐ πάσαν κίνησιν, ἀλλὰ τὴν κατὰ τόπον. There in the *Physics* 253 a 7—20, A. denies that the phenomena of animal motion (*ib.* a 9 τὸ συμβαῖνον ἐπὶ τῶν ἐμφύχων) lend any support to the view that motion has an absolute commencement, (a 11) ὁρῶμεν γὰρ αἰεὶ τι κινούμενον ἐν τῷ ζῳῳ τῶν συμφύτων· τούτου δὲ τῆς κινήσεως οὐκ αὐτὸ τὸ ζῶον αἴτιον, ἀλλὰ τὸ περιέχον ἕως: and this he illustrates by the act of awaking from sleep. Cf. also the parallel passage *Phys.* VIII. 6, 259 b 1—20, especially b 8 ἐνείσιν ἄλλαι κινήσεις φυσικαὶ τοῖς ζῳοῖς, ἃς οὐ κινούνται δι' αὐτῶν, οἷον αὐξήσις, φθίσις, ἀναπνοή, ἃς κινεῖται τῶν ζῳῶν ἕκαστον ἡρεμοῦν καὶ οὐ κινούμενον τὴν ὑφ' αὐτοῦ κίνησιν. τούτου δ' αἴτιον τὸ περιέχον καὶ πολλὰ τῶν εἰσιόντων, οἷον ἐνίων τροφή κτέ.

b 9. ἅπασιν. Not only all animals, but all plants as well, τοῖς ζῳοῖς.

b 11 περὶ δὲ ἀναπνοῆς... 12 ἐπισκεπτέον. The processes of respiration and expiration, of sleep and waking, involve motions of particular bodily parts. This reference is to the separate tracts of the *Parva Naturalia*, *De Somno*, *De Respiratione*, in which they are discussed.

b 13. τί τὸ κινοῦν τὸ ζῶον. If we may be allowed to anticipate, the result of c. 10 is that κινήτικόν κατὰ τόπον is virtually cancelled, being replaced by ὁρεκτικόν, 433 a 21, 31 sq., b 10 sq., 27 sq. For this result we have already been prepared: see 406 b 24 sq. The key to the whole discussion is the assumption that apart from desire or aversion no animal moves, unless it be under compulsion, cf. 432 b 16 sq., b 28 sq. In this chapter A. seeks to obtain an answer by a process of exhaustion, precisely as in III., c. 3 he applied the same process to answer the question, What is imagination? The claims of several faculties, the nutritive, the sensitive, the intellectual and the appetitive itself having first been examined, it appears as if, although some of these under certain circumstances originate local movement, no one of them is invariably the sole moving principle. The next chapter corrects and explains this provisional result.

b 14. τὴν πορευτικὴν κίνησιν. The conception of local motion is circumscribed as motion of progression. The whole, and not merely a part, is moved and changes its place. This restriction must be understood in what follows, both for κινεῖσθαι as in b 17, κινήτικὰ b 18, κινῶν b 27, κίνησις b 28. ὅτι... 15 δύναμις, int. ἐστὶ τὸ κινοῦν τὸ ζῶον τὴν πορευτικὴν κίνησιν. The faculty of nutrition is the first claimant that we dismiss.

b 15. αἰεὶ τε γὰρ ἐνεκά του ἡ κίνησις αὕτη. This motion of progression has a common characteristic, viz. that it is directed to an end. The local movements of animals are made with the purpose of obtaining food or of avoiding harm. It is true that movements of growth and decay are also in a sense ἐνεκά του, for they tend to realise nature's end; so that this taken alone is hardly sufficient. It recurs 433 a 15 of ὁρεξίς.

b 16. ἡ μετὰ φαντασίας ἡ ὁρεξίς ἐστίν. This second condition, the presence of either φαντασία or ὁρεξίς, contributes further to differentiate the local movement in question. In the local movements of growth there is nothing corresponding to φαντασία or to ὁρεξίς in any of its senses. The disjunction ἢ...ἢ seems natural at this point. A. takes as sufficient for the purpose of rejecting θρεπτικὴ a form of the view, perhaps a current view, from which he starts in III., c. 10, viz. φαίνεται δὲ γε δύο ταῦτα <τὰ> κινούμενα, ἢ ὁρεξίς ἢ νοῦς, εἴ τις τὴν φαντασίαν τιθεῖν ὡς νόησιν τινα. Here, as will be observed, the disjunction recurs. The next clause b 16 sq. οὐθὲν γὰρ κτέ. no doubt anticipates the conclusion that ὁρεξίς of some kind is always present. Φαντασία and ὁρεξίς here must be taken as corresponding to νόησις and ὁρεξίς in 433 a 9 sq.,

φαντασία being here named instead of νοῦς to include the cases mentioned 429 a 5 sqq.; while in 433 a 9 sq., where A. is dealing more especially with man, such φαντασία is included under νόησις by what is probably a greater straining of language. Them. paraphrases ἡ...ῆ by καὶ...καί: 117, 30 H., 216, 7 Sp. αὐτὴ γὰρ ἕνεκά τινος ἡ κίνησις ἢ κατὰ τόπον καὶ μετὰ φαντασίας καὶ διώξεως ἢ φυγῆς τοῖς μὴ βίᾳ κινουμένοις ἀλλ' ἐκουσίως. It seems to me not worth while to enquire whether, as Philop. thinks, ὄρεξις is here used in the narrower sense of ἐπιθυμία (cf. note on 433 a 6 *ad fin.*), 582, 14 ὅσα γὰρ τῶν ζῴων φαντασίαν ἔχει, καὶ ὄρεξιν ἔχει, τὰ δὲ μὴ ἔχοντα φαντασίαν μόνην ὄρεξιν ἔχει. καὶ ἐφ' ὧν ἐστὶν ἡ φαντασία, συγκινεῖται τῇ ὄρεξει, ἐφ' ὧν δὲ μὴ ἐστὶν φαντασία, ἀρκεῖ καὶ ἡ ὄρεξις: or whether Simplicius is right in thinking the opposition intended is that between φανταστική ὄρεξις and λογική ὄρεξις, 292, 21 ἡ δὲ ἀντίθεσις δοκεῖ μοι οὐχ ἀπλῶς γνώσεως καὶ ὀρέξεως εἶναι, διότι γνωστικὸν ὄνομα ἡ φαντασία (πάντως γὰρ καὶ ὀρεκτικὸν καὶ γνωστικὸν τὸ κινεῖν), ἀλλὰ τῆς ὀρέξεώς μοι δοκεῖ εἶναι διαίρεσις, ἡ φανταστικῆς οὐσσης, ὅπερ δηλοῖ τὸ μετὰ φαντασίας, ἡ λογικῆς.

b 16 οὐθέν γάρ...17 ἡ βίᾳ. The movement of progression is simply the natural and spontaneous movement of animals in pursuit of something (*δρεγόμενον* = *διώκον*) or in avoidance of what is painful and harmful. Cf. 431 a 13.

b 17 ἔτι...19 ταύτην. Two fresh arguments. If the nutritive principle were identical with the moving principle, then (1) plants, which have only the nutritive principle, would exhibit motion of progression, and accordingly (2) would have the parts instrumental to progression, which nature would not have neglected to supply in a whole class of things, 432 b 21 sqq.

b 19. ὁμοίως δὲ οὐδὲ τὸ αἰσθητικόν, int., as before, ἐστὶ τὸ κινεῖν τὸ ζῶον τὴν πορευτικὴν κίνησιν. πολλὰ γάρ...21 διὰ τέλους. See 410 b 19 and second note *ad loc.*

b 21. εἰ οὖν. The clause introduced by ὥστε, b 25, takes the place of an apodosis. μήτε ποιεῖ μάτην μὴθην, the teleological postulate so often previously assumed in this treatise, stated 415 b 16 sq. and restated explicitly 434 a 31 sq. Cf. *De Part. An.* I. 1, 641 b 12—29 ἡ φύσις ἕνεκά του ποιεῖ πάντα. φαίνεται γάρ, ὥσπερ ἐν τοῖς τεχναστοῖς ἐστὶν ἡ τέχνη, οὕτως ἐν αὐτοῖς τοῖς πράγμασιν ἄλλη τις ἀρχὴ καὶ αἰτία τοιαύτη, ἣν ἔχομεν καθάπερ τὸ θερμὸν καὶ τὸ ψυχρὸν ἐκ τοῦ παντός κτέ. For parallel statements consult *Ind. Ar.* 836 b 28—37, *De Gen. An.* v. 8, 788 b 20 ἐπεὶ δὲ τὴν φύσιν ὑποτιθέμεθα, ἐξ ὧν ὁρῶμεν ὑποτιθέμενοι, οὗτ' ἐλλείπουσαν οὐτε μάταιον οὐθέν ποιοῦσαν τῶν ἐνδεχομένων περὶ ἕκαστον, *Pol.* 1256 b 20 εἰ οὖν ἡ φύσις μὴδὲν μήτε ἀτελὲς ποιεῖ μήτε μάτην. There is normally in nature no useless excrescence, περίεργον, no random effort, ἀλόγως, ὥς ἔτυχε, no makeshift contrivance, πενιχρῶς, *Pol.* 1252 b 1 sqq.

b 22 πλὴν...23 ἀτελείσιν. Cf. 415 a 27 ὅσα τέλεια καὶ μὴ πηρώματα, where see note. That ἀτελὴ and πηρώματα denote two quite distinct conditions may be inferred from 425 a 10.

b 25. ὥστ' εἶχεν ἀν...τῆς πορείας. If αἰσθητικὸν = κινήτικὸν κατὰ τόπον, then such animals would be capable of progressive motion and, since nature would not fail to provide what is necessary, they would also have the parts requisite for locomotion. This argument has already been applied to plants b 18 *supra*.

b 26 ἀλλὰ μὴν...27 ὁ κινῶν, i.e. the one cause of motion, and therefore of progressive motion. See analysis *supra*. This is the Platonic view. Καὶ is explicative. For ὁ καλούμενος νοῦς cf. 407 a 4, 429 a 22.

b 27. ὁ μὲν γὰρ θεωρητικός: μὲν is answered by b 28 αὐτὴ δὲ ἡ κίνησις κτέ. A. first shows that speculative intellect has nothing to do with action, while animal movement implies pursuit or avoidance, i.e. πρακτόν τι.



**b 28.** ἡ κίνησις, int. τοῦ ζῆφου. This must be understood, like b 17 *κινείται*, in the restricted sense pointed out in *note* on b 14 *supra*.

**b 29.** ἀλλ' οὐδ' ὅταν θεωρῇ τι τοιοῦτον. Here A. passes to the intellect which does concern itself with action, cf. 431 a 15 sq. Hence the subject of *θεωρῇ* here must be *ὁ νοῦς* without qualification, and not *ὁ θεωρητικὸς νοῦς*, as in the last sentence. By *τι τοιοῦτον* is meant *πρακτόν τι* or, which is the same thing, *φευκτόν ἢ διωκτόν τι*.

**b 30.** ἥδη κελεύει. The thought, even in this case, does not immediately prompt to movement: Them. 118, 10 H., 217, 3 Sp. *ὁ δὲ πρακτικὸς νοεῖ μὲν τι περὶ τούτων, κύριος δὲ οὐκ ἔστι τῆς κινήσεως. πολλάκις γοῦν τι διανοεῖται φυγῆς ἄξιον καὶ οὐ φεύγει, οἷον σεισμὸν ἢ θηρίον, ἀλλὰ πάλλει μὲν ἡ καρδιά καὶ φρίττουσιν αἱ τρίχες, μένει δὲ ἐν τόπῳ τὸ ζῶον· πολλάκις δὲ καὶ ἡδύ τι λογιζομένου μόριον μὲν τι τοῦ σώματος συναισθάνεται, ἡρεμεῖ δὲ ὅλον τὸ ζῶον.*

**b 30** οἷον πολλάκις διανοεῖται...31 φοβείσθαι. The point of the illustration has been missed by some of the commentators. If the intellect were the sole moving principle, why, asks A., does not motion ensue upon the presentation of an idea to the mind? The mere thought of something terrible is not sufficient to prompt flight, though it may be so vivid as actually to make the heart beat fast. As Themistius sees (118, 11 H., 217, 4 Sp.), *φοβείσθαι* implies not only fright but its consequence, actual flight: *πολλάκις γοῦν κτέ.* (see the citation in last *note*).

**b 31.** ἡ δὲ καρδιά κινεῖται. This involuntary perturbation under excitement is a very different thing from the movement of progression of which A. is seeking an explanation. Not understanding this, Philoponus (583, 17) is obliged to confess that A. has chosen his illustrations badly. Cf. 408 b 8, 403 a 21 sq., 427 b 22 *εὐθὺς συμπάσχομεν*.

**433 a 1.** *ἐτι*. This is a third step, the second having been introduced by (432 b 29) *ἀλλ' οὐδ' ὅταν θεωρῇ κτέ.* Even the imperative command of the intellect does not invariably lead to action, for it is set at naught by the *ἀκρατής*, who in the conflict between *λόγος* and *ἐπιθυμία* obeys the latter.

**a 2.** οὐ κινεῖται, int. τὸ ζῶον.

**a 3.** ὁ ἀκρατής. See *Eth. Nic.* VII. cc. 1—3.

**a 4.** καὶ ὅλως δὲ ὀρώμεν. A further and general argument to show that knowledge in itself is not sufficient to control action; its possessor, e.g. *ὁ ἱατρός*, further requires purpose (*προαίρεσις*).

**a 5.** ποιεῖν. To produce health designedly from sickness, *ἰᾶσθαι*, belongs to art and not to nature: hence *ποιεῖν*, *ποίησις* are more appropriate terms than *γεννᾶν*, *γένεσις*. See *Metaφh.* 1032 a 25—30.

**a 6** ἀλλὰ μὴν...7 κινήσεως. Having dismissed the claims of ἡ θρεπτική, ἡ αἰσθητική and τὸ λογιστικόν, we now proceed to enquire whether the moving faculty is identical with *ὄρεξις*. As pointed out above (*note* on 432 b 13), τὸ ὀρεκτικόν is unquestionably A.'s term for the faculty he is in search of, see 433 b 10 sq. If therefore he here disallows the claims of *ὄρεξις* he must be using the term in the narrow sense in which it denotes only *ἄλογος ὄρεξις*, i.e. in its more frequent shapes of *θυμὸς* and *ἐπιθυμία*. Cf. *Rhet.* I. 10, 1369 a 1 sq. δι' ὄρεξιν [int. πράττουσι] τὰ μὲν διὰ λογιστικὴν ὄρεξιν τὰ δὲ δι' ἄλογον. It is of course only *ἄλογος ὄρεξις* which is at variance with *νοῦς* and *λόγος*. Cf. a 8 *ἰηστρα*, 433 b 5 sqq.

**a 7.** οἱ γὰρ ἐγκρατεῖς. Continent men, as distinguished from the virtuous *σώφρονες*, have depraved desires but do not obey them. *Eth. Nic.* 1102 b 26 *πειθαρχεῖ γοῦν τῷ λόγῳ τὸ τοῦ ἐγκρατοῦς, ἰδ.* 1151 b 34 *ὁ τε γὰρ ἐγκρατὴς οἷος μὴδὲν παρὰ τὸν λόγον διὰ τὰς σωματικὰς ἡδονὰς ποιεῖν καὶ ὁ σώφρων, ἀλλ' ὁ μὲν ἔχων ὁ δ' οὐκ ἔχων φαύλας ἐπιθυμίας, καὶ ὁ μὲν τοιοῦτος οἷος μὴ ἡδεσθαι παρὰ τὸν λόγον, ὁ δ' οἷος ᾔδεισθαι ἀλλὰ καὶ ἄνεσθαι.*

## CHAPTER X.

**433 a 9—30.** Apparently, then, there are two faculties which produce local movement, appetency and intellect, wherein we include imagination as a process of intellect. It is imagination, not thought or reasoning, which prompts the motion of animals, and in men knowledge is often counteracted by imagination [§ 1]. By intellect must be understood the practical intellect, which calculates the means to an external end, not the theoretical intellect, which finds its end in its own activity. Like practical intellect, appetency is always directed to an end: indeed, the practical intellect starts from this end of appetency, and the last step in its process of reasoning is the first step in action [§ 2]. So, too, when imagination originates motion, it does not do so apart from appetency. If motion had two distinct and independent originations, we should be bound to assume some other common faculty, in virtue of which these two independent powers communicated motion. But the fact is that intellect does not cause motion apart from appetency, while appetency does cause motion apart from intellect [§ 3]. There is, however, this difference, that intellect is always right, appetency and imagination are sometimes mistaken. For the object of appetency is not always the good, but sometimes the apparent good, where by good is meant the practicable good: and this belongs to the sphere, not of the necessary, but of the contingent, and will be different in different circumstances [§ 4].

**433 a 9. φαίνεσθαι.** In the foregoing enquiry certain facts are clear. There are cases where *ὄρεξις*, i.e. *ἄλογος ὄρεξις*, prompts to movement, e.g. in the *ἄκρατῆς* and in irrational animals. There are other cases where the movement is determined by intellect or intelligence. The approximate result, then, is that both *νοῦς* and *ὄρεξις* in the narrower sense are principles of motion. Either one or the other controls movement under given conditions. This approximate result will, however, be modified as we proceed. I accept Prof. Bywater's insertion of *τὰ* before *κινουῦντα* (*Journ. of Philol.* vol. xvii., p. 64).

**a 9 εἰ τις τὴν φαντασίαν...το τινα.** Cf. 427 b 14—21, 27 sq., where see *notes*. We have been told that *φαντασία* determines action, not only in irrational creatures, but under certain circumstances in men, 429 a 5 sqq., and there (429 a 5) *πολλὰ κατ' αὐτὰς* [int. *τὰς φαντασίας*] *πράττει τὰ ζῷα* seems a sufficient defence of *πολλὰ* in 433 a 10. Unless *φαντασία* be ranged with *νοῦς*, it would appear as if there were three, and not two, springs of action.

**a 13. νοῦς καὶ ὄρεξις.** Here *ὄρεξις* is still *ἄλογος ὄρεξις*.

**a 14. νοῦς δὲ...πρακτικὸς.** In the last section it must be understood that by *νοῦς* we mean the calculating intellect, which has an end in view, i.e. the practical, as opposed to the speculative, intellect. The distinction between them has been mentioned in passing 431 a 8—17 and 432 b 27—433 a 1. See also *Eth. Nic.* vi., c. 2, especially 1139 a 26 sqq., a 35 sqq. Peters renders the latter: "Mere reasoning, however, can never set anything going, but only reasoning about means to an end—what may be called practical reasoning (which practical reasoning also regulates production; for in making anything you always have an ulterior object in view—what you make is desired not as an end in itself, but only as a means to, or a condition of, something else; but what you do is but an end in itself)."

**a 15. τῷ τέλει.** Cf. Them. 118, 32 H., 218, 7 Sp. *διαφέρει δὲ τοῦ θεωρητικοῦ τῇ πολλᾷ εἰρημένῃ διαφορᾷ, ὅτι τῷ μὲν αὐτῇ τέλος ἢ ἐνέργεια, τῷ πρακτικῷ δὲ ἡ ὄρεξις ἄλλου τινὸς ἕνεκεν παρ' αὐτὴν τὴν ἐνέργειαν.* According to III., c. 6, the

speculative intellect has two modes of operation, viz. the thinking of indivisibles, φάναι ἢ νοεῖν, or the combining (συντιθέναι) of two notions in a judgment, with all the supplementary processes of deductive reasoning. In neither of these two modes of operation is the speculative intellect concerned with action. Practical intellect, on the other hand, has the problem set it of determining the means to a given end. How it treats this problem may be illustrated from *Metaph.* 1032 b 6—26 and *Eth. Nic.* 1112 b 11—20: "It is not about ends, but about means that we deliberate...having some particular end in view, we consider how and by what means this end can be attained, and if it appear that it can be attained by various means, we further consider which is the easiest and best: but if it can only be attained by one means, we consider how it is to be attained by this means, and how this means itself is to be secured, and so on, until we come to the first link in the chain of causes, which is last in the order of discovery" (Peters, *Eth. Nic.*, p. 70).

a 15 οὐ γὰρ ἡ ὄρεξις...16 νοῦ: αὕτη is the antecedent of οὐ and is assimilated to the gender of ἀρχή, and οὐ ἡ ὄρεξις [int. ἐστὶ] = τὸ ὀρεκτόν. Cf. for the attraction *Eth. Nic.* 1143 b 4 ἀρχαὶ γὰρ τοῦ οὐ ἕνεκα αὐται [int. τὸ ἔσχατον καὶ ἐνδεχόμενον καὶ ἡ ἑτέρα πρότασις (1143 b 3), i.e. the particulars, ἔσχατα, which constitute the minor premiss]. The practical intellect starts, in the manner exemplified in the passages just cited from *Eth. Nic.* and *Metaph.*, with the result desired and considers the conditions upon which its attainment depends, until it arrives at one which can be realised, τὸ ἔσχατον of the next clause.

a 16. τὸ δ' ἔσχατον ἀρχὴ τῆς πράξεως. When the practical intellect has reached its conclusion, i.e. has found some means to the end sought which is capable of realisation, e.g. bodily movement, its work is ended. Then begins the task of πράξις or ποιήσις, as the case may be. The expert or craftsman sets about doing or constructing, taking the last step in the intellectual process for his starting-point. His work continues until the end in view, which was the starting-point of the intellectual process, has been achieved. Cf. Them. 118, 34 H., 218, 10 Sp. ὁ γὰρ σκοπὸς ἐφ' ὃν ἡ θεωρία καὶ ἡ ὄρεξις, οὗτός ἐστιν ἀρχὴ τοῦ πρακτικοῦ νοῦ· πρὸς τοῦτον γὰρ ὁρῶν λογίζεται καὶ βουλευέται περὶ τῶν πρακτέων· καὶ τὸ ἔσχατον αὐτῷ τῆς νοήσεως, εἰς δ' ἵσταται βουλευόμενος, ὅπως ἂν τὸ τέλος περιποιήσῃται, ἀρχὴ τῆς πράξεως καὶ αὐ πάλιν τὸ πέρας τῆς πράξεως ἡ τῆς νοήσεως ἐστὶν ἀρχή. Cf. *Eth. Nic.* 1143 b 2 ὁ δ' ἐν ταῖς πρακτικαῖς [int. νοῦς] τοῦ ἐσχάτου καὶ ἐνδεχομένου [int. καὶ ἄλλως ἔχειν] καὶ τῆς ἐτέρας προτάσεως. In the second edition of Trend. the view that in our present passage, *De A.* 433 a 16, τὸ ἔσχατον = τὸ κινεῖν ἀκίνητον, i.e. τὸ ὀρεκτόν, is defended by a reference to *Eth. Nic.* 1143 b 2. Cf. Trend.'s explanation of both passages in *Histor. Beitr. zur Philosophie*, II. 375 sqq., ad *Eth. Nic.* 1143 a 34. According to Trend., τὸ ἔσχατον (d. h. nach der Seite der Erscheinung hin) is "das im Handeln unmittelbar Einzelne," the particular act with which the series of acts terminates, the act the effort to realise which originates action. But I prefer to understand by τὸ ἔσχατον the particular action at the other end of the series, with which the series starts, the first step taken, which may not be, and often is not, τὸ ὀρεκτόν itself, but only a means towards it.

a 17. ὥστε εὐλόγως. The two springs of action are now seen to hinge upon τὸ ὀρεκτόν. It is the object of the one faculty, τὸ ὀρεκτικόν, and it is the starting-point of the other faculty, διάνοια πρακτική, whose deliberations are concerned with the means by which it is to be realised.

a 18. τὸ ὀρεκτόν γὰρ κινεῖ, int. τῷ νοηθῆναι ἢ φαντασθῆναι, b 12 *infra*. Wallace followed the inferior MSS. in reading ὀρεκτικόν.

a 19 καὶ διὰ τοῦτο ἡ διάνοια κινεῖ...20 ὀρεκτόν. This simply repeats a 15 οὐ

γάρ...16 πρακτικοῦ νοῦ *supra*. The understanding or practical discursive intellect is a moving cause, in so far as its syllogism points to a certain conclusion, i.e. an act to be done, whereupon action follows, as explained 434 a 19 *infra* ἥδη αὕτη κινεῖ ἡ δόξα, οὐχ ἡ καθόλου· ἡ ἄμφω. Cf. *Eth. Nic.* 1147 a 24—28, *De Motu An.* 7, 701 a 7—b 10. So far as *διάνοια* is an intellectual process, all it can do is to prescribe a course of action, 431 a 15 sq., 433 a 2 λεγούσης φεύγειν τι ἢ διώκειν, *Eth. Nic.* 1147 a 34. For διὰ τοῦτο...ὅτι cf. 435 a 24 sq., 434 a 10 αἴτιον τοῦτο...11 ὅτι.

a 20. καὶ ἡ φαντασία...ἄνευ ὁρέξεως. What holds of *διάνοια πρακτικὴ* in man must hold of *φαντασία* in the lower animals. Cf. 429 a 4—8, 433 a 10—12.

a 21. ἐν δὲ τι τὸ κινοῦν τὸ ὁρεκτικόν. Cf. *Simpl.* 297, 32 ἦτοι τὸ ὁρεκτόν· διπλὴ γὰρ ἡ γραφή. Ὁρεκτόν, the reading of E L W, Bekker, Trendelenburg, Belger and Wallace, was changed by Torstrik, who is followed by Biehl and Rodier, to ὁρεκτικόν. Torst. defends his choice thus: Scripsi τὸ ὁρεκτικόν, propter ea quae his opponuntur: εἰ γὰρ δύο, νοῦς καὶ ὄρεξις (h. e. τὸ ὁρεκτικόν), ἐκίνουν. It seems more probable that A. should complete his determination of the faculty, the immediate business in hand, before he refers animate motion to its prime movent, its ἀκίνητον κινοῦν. If so, having up till now consented to admit two moving causes, he prepares to make one of them subordinate to the other, practical reason to appetency.

a 21 εἰ γὰρ δύο...22 ἐκίνουν. A conditional clause of this grammatical form ordinarily implies that the condition is not fulfilled, while hitherto the two springs of action have been consistently affirmed more than once, 433 a 9, 17 sq. But the elasticity of the grammatical canon is notorious. See Postgate, *Transactions of the Camb. Philol. Soc.* vol. III., p. 63: "The presence of *ἐν* here" (i.e. in the apodosis) "marks the consequence as ideal, but not necessarily unfulfilled....The relation between the condition and the consequence is primarily one of limited possibility, not of strict conditional connexion between events assumed to be unreal."

a 22. κατὰ κοινὸν ἂν τι ἐκίνουν εἶδος, "in virtue of some characteristic which they shared in common." Cf. *Them.* 119, 9 H., 218, 26 Sp. εἰ δὲ ἦν δύο καὶ ἕτερα ἀλλήλων νοῦς καὶ ὄρεξις, ἐκίνει δὲ ἄμφω, ἄλλη ἂν τις δύναμις ὑπῆρχεν ἀμφοτέροις κοινή, ἧς ἀμφοτέρα κοινωνοῦντα ἐκίνει τὸ ζῶον, ὡς τῷ δίποδι καὶ τῷ τετράποδι τὸ πόδας ἔχειν. νῦν δὲ ὁ μὲν νοῦς οὐ φαίνεται κινῶν ἄνευ ὁρέξεως (εἴρηται γὰρ ὅτι καὶ ἡ βούλησις ὄρεξις), ἡ δὲ ὄρεξις καὶ ἄνευ νοῦ. νῦν δὲ. When we examine the actual facts, we see that the two springs of action are not independent, for wherever *νοῦς* impels to action *ὄρεξις* is present, being found in the guise of *βούλησις* = *ὄρεξις ἀγαθοῦ*, while motion often takes place contrary to reason under the influence of *ὄρεξις ἄλογος*.

a 23. ἡ γὰρ βούλησις ὄρεξις. See above 414 b 2, 432 b 5.

a 24. κινῆται. The subject of this verb, as of *κινεῖται*, is τὸ ζῷον, in this case man: cf. 433 b 18.

a 25 ἡ δ' ὄρεξις...26 τίς ἐστιν. Cf. *Them.* 119, 13 H., 219, 3 Sp. ὄρεξις γὰρ ἐστὶ καὶ θυμὸς καὶ ἐπιθυμία, καὶ παρὰ τὸν λογισμὸν κινεῖ πολλάκις.

a 26. νοῦς μὲν οὖν πᾶς ὀρθός. Cf. *Eth. Nic.* 1139 a 23 δεῖ διὰ ταῦτα μὲν τὸν τε λόγον ἀληθῆ εἶναι καὶ τὴν ὄρεξιν ὀρθήν, 1139 b 4 διὸ ἡ ὁρεκτικὸς νοῦς ἡ προαίρεσις ἡ ὄρεξις διανοητική. The rectitude attributed to intellect as a spring of action consists, as we shall see, in this, that the good at which it aims is real, and not apparent, good. Hence Themistius (119, 17 H., 219, 7 Sp.) inserts in his paraphrase after *νοῦς* the words *ὁ γὰρ κυρίως*, "if it is to deserve the name of *νοῦς* proper." ὄρεξις δὲ...27 ὀρθή. Here, again, irrational springs of action are intended, *ὄρεξις* in the narrower sense: *Them.* 119, 18 H., 219, 8 Sp. *φαντασία*

ἢ χωρὶς νοῦ. These will be οὐκ ὀρθαί when they aim at apparent, and not real, good.

a 27 διὸ ἀέ...28 ἀγαθόν. Cf. Them. 119, 20 H., 219, 11 Sp. ἀλλὰ τὸν μὲν νοῦν τὸ ἀληθινὸν ἀγαθόν, τὸ φαινόμενον δὲ τὴν ἐπιθυμίαν καὶ τὸν θυμὸν [int. κινεῖ], *Eth. Nic.* 1113 a 15—b 6, from which I cite a 23 ἀπλῶς μὲν καὶ κατ' ἀλήθειαν βουλευτὸν εἶναι ἀγαθόν, ἐκάστω δὲ τὸ φαινόμενον, 1114 a 31 πάντες ἐφίενται τοῦ φαινομένου ἀγαθοῦ, τῆς δὲ φαντασίας οὐ κύριοι, ἀλλ' ὁποῖός ποθ' ἕκαστός ἐστι, τοιοῦτο καὶ τὸ τέλος φαίνεται αὐτῷ, *Eth. Eud.* VII. 2, 1235 b 25 τὸ γὰρ ὀρεκτὸν καὶ βουλευτὸν ἢ τὸ ἀγαθὸν ἢ τὸ φαινόμενον ἀγαθόν.

a 29. οὐ πᾶν δέ...ἀγαθόν. Good as the end which sets appetency in motion is limited to practical, i.e. contingent, good. Cf. Them. 119, 22 H., 219, 15 Sp. οὐ πᾶν δὲ ἀγαθὸν κινητικὸν τῆς ὀρέξεως· οὐ γὰρ τὸ πρῶτον οὐδὲ εἴ τι ἀπλῶς ἀγαθὸν καὶ αἰδίου· τοῦτο μὲν γὰρ ἴσως κοινὸν ἅπασιν τὸ ὀρεκτὸν καὶ ἄλλον τρόπον δὲ ὕστερον ἐπισκεπτέον. νῦν δὲ τὸ ἐκάστω τῶν ζώων αἴτιον τῆς κινήσεως ἐπιζητοῦμεν, ὅπερ ἤδη τὸ ἐν μέρει ἐστὶν ἀγαθὸν καὶ τὸ ἐνδεχόμενον καὶ γενέσθαι καὶ μὴ γενέσθαι, καὶ τὸ μὴ ἀπλῶς ἀλλὰ τινὶ καὶ ποτὲ καὶ πρὸς τόδε. πρακτὸν δ' ἐστὶ...30 ἔχειν. Contingent events are assigned to the λογιστικὸν μόριον τῆς ψυχῆς, as distinct from the ἐπιστημονικόν, *Eth. Nic.* 1139 a 6 sqq. (especially a 12—14), 1140 b 2 ἐνδέχεται τὸ πρακτὸν ἄλλως ἔχειν, also 1141 b 10 βουλευεται δ' οὐδεὶς περὶ τῶν ἀδυνάτων ἄλλως ἔχειν.

**433 a 31—b 30.** We have, then, to recognise an appetitive faculty related to the object of appetency. Any division of faculties of the soul which is based upon functions must be elastic enough to admit a great variety of such parts. Such faculties as the sensitive, nutritive, ratiocinative, deliberative, appetitive differ from each other more widely than appetite or desire does from spirit or passion in the scheme of the Republic [§ 5]. The conflict of motives is explained as follows: reason and desire may be at variance in beings which have perception of time. Desire takes the pleasurable of the immediate future for the absolutely pleasurable and the absolutely good. Thus it prompts to indulgence. Reason, out of regard to the more distant future, bids us refrain. The motive principle is always specifically one and the same, viz. the faculty of appetency as such, which has for its prime unmoved movent the object of appetency; the latter originating motion by being thought or imagined. There is, however, numerically a plurality of springs of motion [§ 6]. The elements of motion are (1) the movent, whether (a) immovable or (b) moved; (2) that with which it produces motion; (3) that in which motion is produced. Here (a), the unmoved movent, is the practical good, the good which is the end of action, while (b), the movent which is itself moved, is the faculty of appetency set in motion by the object of appetency and communicating motion to the appetent subject *quā* appetent. Again, (3) that which is moved is the animal, and in (2), the instrument of motion, we come to that which is corporeal (e.g. a limb). This bodily instrument by which appetency produces its effect must be studied among the functions which are common to body and soul [§ 7]. Briefly, this instrument is found where the same thing is the beginning and end, e.g. the ball and socket joint, where the concave and convex act together, the one being the end and the other the beginning, so that, while one point is at rest, the other is in motion. Locally inseparable, they are logically distinct. All movement comes about by pushing and dragging, and consequently implies a fulcrum or point at rest [§ 8]. Hence, generally, the animal, *quā* appetitive, is capable of self-motion, but it is not appetitive apart from imagination, and imagination, again, is derived from sense or from intellect. And in this faculty (imagination) animals other than men participate [§ 9].

433 a 31 ὅτι μὲν οὖν...433 b 1 φανερόν. Here, then, is the result of the investigation begun in a 9 *supra*. The faculty of soul which originates motion is ἡ καλουμένη ὀρεξίς in the wider sense of that term, i.e. τὸ ὀρεκτικόν, a 21.

433 b 1. τοῖς δὲ διαιρούσι. At this point A. indulges in one more criticism of the Platonic tripartition in the *Republic*. If we are to make parts of the soul, basing our partition upon division of function, among such parts ὀρεκτικόν is entitled to a place: cf. Them. 119, 33 H., 219, 28 Sp. μεθ' ὧν δὴ καὶ τὸ ὀρεκτικόν τοῦτο περὶ οὗ ὁ λόγος διώρισε.

b 3. βουλευτικόν. Comparing this list of five "parts" with that given 414 a 31 sq., we see that κινητικόν κατὰ τόπον is absent and for the first time in the treatise βουλευτικόν is introduced (cf. 434 a 12). Cf. *Eth. Eud.* II. 10, 1226 b 25 βουλευτικόν τῆς ψυχῆς. In *Magna Moralia* I., c. 35 it has to do with contingent matters: 1196 b 27 τὸ δὲ βουλευτικόν καὶ προαιρετικόν περὶ τὰ αἰσθητὰ καὶ ἐν κινήσει, καὶ ἀπλῶς ὅσα ἐν γενέσει τε καὶ φθορᾷ ἔστιν. βουλευόμεθα γὰρ ὑπὲρ τούτων ἃ ἐφ' ἡμῖν ἔστι καὶ πράξαι καὶ μὴ πράξαι προελομένοισι. Thus it fairly corresponds with τὸ λογιστικόν of *Eth. Nic.* 1139 a 12 sqq., as distinct from τὸ ἐπιστημονικόν, these two being the subdivisions of the λόγον ἔχον. Τὸ βουλευτικόν can hardly therefore be a division of the same rank with the other four. The mention of νοῦς πρακτικὸς 433 a 14, διάνοια πρακτικὴ 433 a 18 and the admission 432 b 29 that νοῦς does sometimes deal with the contingent would seem to involve some similar division of τὸ νοητικόν, hitherto used as a comprehensive term for the faculty corresponding to νοῦς. The term ἐπιστημονικόν has occurred 431 b 27, and recurs 434 a 16, and we might have expected ἐπιστημονικόν, βουλευτικόν here instead of νοητικόν, βουλευτικόν. In 432 b 26 λογιστικόν is as vague as νοῦς.

b 5 ἐπεὶ δ'...13 τὰ κινῶντα. This is a cumbrous and complicated sentence. Omitting parentheses, we obtain the gist of it in a simpler form ἐπεὶ δ' ὀρέξεις γίνονται ἐναντίαι ἀλλήλαις...εἶδει μὲν ἐν αὐτῇ τὸ κινῶν τὸ ὀρεκτικόν, ἢ ὀρεκτικόν, πρῶτον δὲ πάντων τὸ ὀρεκτικόν...ἀριθμῶ δὲ πλείω τὰ κινῶντα. Thus simplified, the inference drawn from the conflict of desire is that the unity of the appetitive faculty does not preclude a plurality of springs of motion.

b 5. ὀρέξεις γίνονται...ἀλλήλαις. The examples show that ὀρέξεις here must be taken in the wider signification, so as to include both λόγος (or λογισμὸς or βούλησις) and ἐπιθυμία. Hence the conflict can be seen in the case of the ἀκρατής and the ἐγκρατής: cf. 433 a 1—3, 6—8. Cf. also 434 a 12—14.

b 7. ἐν τοῖς χρόνῳ αἰσθησιν ἔχουσιν, preeminently, if not exclusively, in man. Cf. Them. 120, 11 H., 220, 16 Sp. καὶ μάλιστα γὰρ ἐν ἀνθρώπῳ· οὗτος γὰρ αἰσθάνεται χρόνον καθ' αὐτό, τὰ δὲ ἄλλα κατὰ συμβεβηκός, οὐ γὰρ τοῦ χρόνου ἀλλὰ τοῦ πάθους οὗ ἔπαθε πάλαι· ἀμέλει τοῦ μέλλοντος οὐδὲν αὐτῶν αἰσθησιν ἔχει, ὅτι μηδὲ πάσχει τι ἐν τῷ μέλλοντι· εἰ μὴ ἄρα ἐν μύρμηξι καὶ μελίτταις καὶ τοῖς ἀποθησαυρίζουσιν τὴν τροφὴν ἔστι πως καὶ τοῦ μέλλοντος αἰσθησις χρόνου. ἄνθρωπος δὲ μόνος· ἅμα πρόσσω καὶ ὀπίσσω· μόνος γὰρ νοῦν ἔχει ᾧ τὸ πρότερον ἀριθμεῖ καὶ τὸ ὕστερον, ὃ δὲ ἀριθμὸς οὗτος χρόνος ἔστιν. Them. goes out of his way to criticise Alex. Aphr. for calling man ποιητὴς τοῦ χρόνου, which, according to Them., implies that time has no objective existence.

b 7 δ μὲν γὰρ νοῦς...8 τὸ ἥδη. With ἀνθέλκειν κελεύει cf. 432 b 30 κελεύει δῶκειν ἢ φεύγειν, b 31 οὐ κελεύει δὲ φοβεῖσθαι. Hence we must complete the second clause thus: ἡ δὲ ἐπιθυμία διὰ τὸ ἥδη <δῶκειν κελεύει>. The antithesis is between the more distant future and the moment immediately following, τὸ ἔγγυς τοῦ παρόντος νῦν χρόνου, as Trend. well observes: Subtiliter scriptor τὸ ἥδη, nec vero τὸ νῦν posuit. Cupido enim non temporis punctum, quod adest (in hoc enim haud acquiescit), sed quod instat, intuetur. Cf. *Phys.* IV. 13,

222 b 7 τὸ δ' ἥδη τὸ ἐγγύς ἐστι τοῦ παρόντος νῦν ἀτόμου μέρος τοῦ μέλλοντος χρόνου, Them. 120, 22 H., 221, 4 Sp. [ἄν] ὁ μὲν [int. ὁ νοῦς] διὰ τὸ μέλλον ἀνθέλκει, ἡ δὲ ἐπιθυμία τὸ παρὸν ἡδὺ διώκει.

b 8 φαίνεται γὰρ τὸ ἥδη...9 ἀπλῶς. This illustrates 433 a 28 τὸ φαινόμενον ἀγαθόν. The first mistake is the confusion of immediate and relative pleasure with absolute pleasure: cf. *Eth. Nic.* 1099 a 11—15, 1155 b 26—33, 1176 a 8—29. A.'s standard is ὁ σπουδαῖος, and true pleasure that which he thinks so: cf. *Eth. Nic.* 1113 a 25—b 2, 1176 a 15 sqq. The second mistake is to confuse pleasure with good absolute. Absolute good is indeed absolutely pleasant, *Eth. Nic.* 1156 b 22 sq., but the converse is not always true, *ib.* 1113 a 31—b 2.

b 10. διὰ τὸ μὴ ὄραν τὸ μέλλον. The subject of ὄραν may be τὸν δρεγόμενον or τοῦτον ᾧ φαίνεται.

b 11 πρῶτον δὲ πάντων...12 φαντασθῆναι. This is parenthetical: cf. *Simpl.* 300, 20 πρὶν δὲ πάλιν ἀποδοῦναι πρὸς τὸ εἶδει μὲν ἂν ἐν εἴῃ "πλείω δὲ τῷ ἀριθμῷ," διότι δύο τὰ ὀρεκτικὰ καὶ μαχόμενα ἐνίοτε ἀλλήλοις, τό τε λογικὸν καὶ τὸ ἀλόγως ὀρεγόμενον, ἐν μέσῳ ὑπέμνησεν ὡς πρὸ τοῦ ὀρεκτικοῦ τὸ ὀρεκτὸν κινεῖ. The parenthesis serves to explain 433 a 9 sq., where φαντασία was included under νοῦς as a cause of movement.

b 13. ἐπειδὴ δ' ἐστὶ κτέ. The grammatical structure of the sentence is obscure. Alex. Aphr. (ap. Philop. 590, 39 sq.) rightly held that there was no apodosis to ἐπειδὴ. Plutarch of Athens (ap. Philop. 591, 1 sqq.) supposes the suppressed apodosis to be τέτταρα ἄρα ἐστὶ τὰ τῇ κινήσει συμβαλλόμενα: since three things are implied in motion and one of them appears in a twofold form, therefore the things which contribute to motion are really four. Apparently the missing apodosis, which seems extraordinarily feeble as so supplied, should have come after b 15 τὸ δὲ κινεῖν καὶ κινούμενον. This view is accepted by *Simpl.* 300, 34—301, 1, who sees a natural transition to the enumeration of all four in b 15—21. His words are: (300, 1) ἐφ' οἷς εὐλόγως καταριθμεῖται, τίνα τὰ τέσσαρα. Both these views admit anacoluthia: indeed, the only alternative would be to suppose that A. introduced an apodosis with δέ, either at b 15 ἐστὶ δέ or, less probably, at b 14 τὸ δὲ κινεῖν. But in the judgment of Bonitz (*Arist. Stud.* II, III, pp. 124—129) there is no adequate evidence that A. so far departed from the ordinary usage of Attic prose. The simplest explanation is to assume an oversight of the writer, which is more startling in a comparatively short sentence like the present than in some of the long and involved sentences which commence with ἐπειδὴ and ἐπεὶ, such as 414 a 4 sqq., 427 a 17—b 8 or that commencing with εἰ οὖν 434 a 32—b 8. "Zweifelhaft ist, ob die Erinnerung an die sprachlich untergeordnete Form des Vordersatzes erhalten geblieben ist," says Bonitz of less irregular constructions. In the present case, if we disentangle the thought from the confused form of the expression, it will be "Since there are three (or rather, four) things implied in motion generally, we must discover something corresponding to each of them in this particular case of motion."

b 13. τρία. That motion cannot be explained without assuming this series of three factors, namely (1) the unmoved movent, which communicates but does not receive motion, (2) the movent which is itself in motion, (3) that which is moved but not itself a movent, is the doctrine laid down in the *Physics*, e.g. VIII. 5, 256 b 14 τρία γὰρ ἀνάγκη εἶναι, τό τε κινούμενον καὶ τὸ κινεῖν καὶ τὸ ᾧ κινεῖ. τὸ μὲν οὖν κινούμενον ἀνάγκη κινεῖσθαι, κινεῖν δ' οὐκ ἀνάγκη, τὸ δ' ᾧ κινεῖ, καὶ κινεῖν καὶ κινεῖσθαι· συμμεταβάλλει γὰρ τοῦτο ἅμα καὶ κατὰ τὸ αὐτὸ τῷ κινουμένῳ ὄν. δῆλον δ' ἐπὶ τῶν κατὰ τόπον κινούντων· ἅπτεσθαι γὰρ ἀλλήλων ἀνάγκη μέχρι τινός· τὸ δὲ κινεῖν οὕτως ὥστ' εἶναι μὴ ᾧ κινεῖ, ἀκίνητον. It is also stated *Metaφh.*

1072 a 24 ἐπεὶ δὲ τὸ κινούμενον καὶ κινῶν, καὶ μέσον τοῖνυν ἐστί τι ὃ οὐ κινούμενον κινεῖ, αἰδίου καὶ οὐσία καὶ ἐνέργεια οὔσα. Here, however, the threefold analysis becomes fivefold (Them. 120, 27 H., 221, 11 Sp. τρία τοῖνυν ἐστὶν ὧν χωρὶς οὐκ ἂν γένοιτο ἡ κίνησις αὐτῇ τοῖς ζώοις, μᾶλλον δὲ τέτταρα), for the bodily instrument is here distinguished from ὄρεξις and both belong to (2) κινῶν καὶ κινούμενον, while (1) is τὸ ὀρεκτόν, i.e. πρακτὸν ἀγαθόν, and (3) is τὸ ζῶον.

b 14. τὸ δὲ κινῶν διπτόν. Here A. obtains his series by starting with τὸ κινῶν, which he divides into τὸ κινῶν ἀκίνητον and τὸ κινῶν καὶ κινούμενον, while in the *Metaphysics* as cited above he appears to start with κινούμενον, which he divides into κινούμενον κινῶν and κινούμενον μὴ κινῶν, at least if we may trust the lost paraphrase by Themistius of that passage, as represented in a Latin version of an older Hebrew version: "cum igitur detur mobile movens et mobile non movens, necessario datur et movens non mobile." See Prof. Jackson in *Journ. of Phil.* vol. XXIX., p. 141 sq.

b 15 ἔστι δὲ τὸ μὲν...16 ἀγαθόν. The practical good, although belonging to the region of the contingent, is nevertheless fixed and constant for appetency. Si τὸ πρακτὸν ita supra definiebatur, ut id esset, quod etiam aliter se habere posset: quod nunc immotum dicitur, non repugnat. Quatenus enim cupidinem movet, ipsum immotum est extra animi vicissitudines positum: quatenus appetitus ad id ipsum tendit, mutationes admittit (Trend.). Cf. *Μεταφῆ.* 1072 a 26 κινεῖ δὲ ὧδε τὸ ὀρεκτόν καὶ τὸ νοητόν [κινεῖ οὐ κινούμενα]. τοῦτων τὰ πρῶτα τὰ αὐτά. ἐπιθυμητόν μὲν γὰρ τὸ φαινόμενον καλόν, βουλευτόν δὲ πρῶτον τὸ ἐν καλόν. ὀρεγόμεθα δὲ διότι δοκεῖ μᾶλλον ἢ δοκεῖ διότι ὀρεγόμεθα. ἀρχὴ γὰρ ἡ νόησις, *De Motu An.* 6, 700 b 35 τὸ μὲν οὖν πρῶτον οὐ κινούμενον κινεῖ, ἢ δ' ὄρεξις καὶ τὸ ὀρεκτικὸν κινούμενον κινεῖ. τὸ δὲ τελευταῖον τῶν κινουμένων οὐκ ἀνάγκη κινεῖν οὐδέν. This last treatise, though not by Aristotle, is useful for illustration.

b 17 κινεῖται γὰρ τὸ κινούμενον...18 ἡ ἐνέργεια. All modern editors, from Trend. to Rodier, take ὄρεξις as the subject of the second clause. The two last words are variously given: as ἡ ἐνέργεια, not only by Bek. and Trend., but also, as should have been mentioned in the critical notes, by Biehl; as ἡ ἐνέργεια by Torst. "quia ὄρεξις est etiam ea quae est δυνάμει" (Torst., p. 207 notes); as ἡ ἐνέργεια by Rodier. I adopt the latter and, with this exception, have printed the text of Trendelenburg's first edition and translated accordingly. But it is unsatisfactory because (1) it fails to explain the divergence between codd. E L ἡ κίνησις ὄρεξις τις and the other MSS, which read either ἡ ὄρεξις κίνησις τις or ἡ ὄρεξις κίνησις, (2) the first clause "the animal which is moved is moved in so far as it desires," though true, is irrelevant, if A. wishes to prove that τὸ ὀρεκτικόν is κινούμενον, and the ancient commentators refer this clause, not to the animal, but to the faculty, while (3) it is open to Torstrik's telling objection: Manifestum autem est non omne τὸ κινούμενον etiam ὀρέγεσθαι: si lapis iacitur vel cadit, κινεῖται μὲν, ὀρέγεται δ' οὐ. The materials for a more satisfactory restoration of the text are before us in cod. E and Philoponus 591, 12 κινεῖται γὰρ τὸ κινῶν ἢ ὀρέγεται, 591, 16 καὶ φησιν ὅτι ἡ γὰρ ὄρεξις ἡ κίνησις ἐστὶν ἡ ἐνέργεια. I conjecture that A. wrote κινεῖται γὰρ τὸ κινῶν ἢ ὀρέγεται, καὶ ἡ κίνησις τις (or simply κίνησις) ὄρεξις ἢ ἐνέργεια. Then τὸ κινῶν = τὸ ὀρεκτικόν. I fully endorse Torstrik's opinion: quum τὸ ὀρεκτικόν et moveat et moveatur, hoc loco noluī Ar. explicare quī moveat: cf. b 19—21: explicavit vero quomodo moveatur. That ὄρεξις should be called κίνησις or κίνησις τις is quite in accord with 408 b 1—11 (cf. *Phys.* VIII. 3, 254 a 26—30), since all mental activities involve some corporeal change. However, to prevent any misconception, ἡ ἐνέργεια is added: cf. 417 a 14—17, 418 a 1—3. If the genuine text were what I conjecture, cod. E comes very near to it, but the fatal change of ἡ κίνησις to ἡ κίνησις would



be very likely to lead to the further change of ἡ κίνησις τις ὁρεξίς into ἡ ὁρεξίς κίνησις τις: and similarly of τὸ κινεῖν into τὸ κινούμενον and in turn to τὸ ὁρεγόμενον. But the further question arises: in what way has A. proved his point that the appetent faculty is moved, where we ought to understand "with spatial motion"? For in a chain of moved movents mediating between the first cause of the system and that which is merely moved without imparting the motion to anything else the motion transmitted ought to be of the same species throughout. Hence the use of the terms κινεῖν ἀκίνητον, κινεῖν καὶ κινούμενον, κινούμενον μόνον, which is quite in place 416 b 25 sqq., and 434 b 29 sqq., where physical bodies are spoken of, seems only permissible here by way of analogy. The motion which appetency imparts is spatial motion, but the motion with which it is moved cannot be of this nature. According to Simplicius, Alex. Aphr. met this objection by affirming that τὸ ὁρεκτικὸν is moved with spatial motion merely κατὰ συμβεβηκός, following strictly 408 a 30—34: cf. Simpl. 302, 28—30. This is exactly what we should expect, when we compare Alex. Aphr. *De An.* 78, 24—80, 3, where he emphatically asserts that the appetitive soul κινεῖ τὸ ζῷον οὐ κινουμένη and that, even when the phrase ὑπὸ τίνος κινεῖσθαι is less strictly applied to τὸ κατ' αὐτὸ [int. τὸ κινεῖν] κινούμενον, this vague sense applies to the animal, which is moved κατὰ τὴν ψυχὴν, κατὰ τὸ ἔμψυχον εἶναι, but not to the soul or any part of the soul. Them. also understood κινούμενον, as well as κινεῖν, of spatial motion: (120, 30 H., 221, 16 Sp.) αὕτη γὰρ [int. ἡ ὁρεξίς] κινεῖ τὰ ζῶα κινήσεια ὑπὸ τοῦ ἀγαθοῦ· ἡ γὰρ κίνησις ἢ κατὰ τόπον οὐδὲν ἄλλο ἐστὶν ἢ τῆς ὁρέξεως εἰς τοῦμφανὲς πρόοδος καὶ ἐνέργεια. I agree with Heinze, the latest editor of Them., that this paraphrase points to the reading ἡ κίνησις ὁρεξίς τις ἐστίν. The spatial motion of the animal, Them. argues, is the appetency realised in act. What then? The animal moves spatially, but the appetent faculty can only be said to do so *per accidens*. Plutarch of Athens, as reported by Simplicius, explained κίνησις as exactly equivalent to ὁρεκτικὴ ἐνέργεια, thus making the movement attributed to appetency a mental act, and not spatial motion at all: Simpl. 302, 25 ὁ Πλούταρχος οὕτως ἐξηγεῖται, αὐτὴν τὴν ὁρεκτικὴν ἐνέργειαν κίνησιν εἰρησθαι Πλατωνικῶς φάμενος ὑπὸ τοῦ Ἀριστοτέλους νῦν. Simpl. (302, 23—303, 2) and Philop. (591, 12—19) accept this way out of the difficulty, but the former with considerable qualifications, suggesting (302, 37 sq.: cf. 302, 26 sq.) that the ὁρεξίς may be called κίνησις because it is an actuality terminating in κίνησις, and again (302, 27 sq.) that A. uses κίνησις, not for the passive state of being moved, but for the active function of causing motion.

b 18. τὸ δὲ κινούμενον τὸ ζῷον. The animal as a whole, and not regarded as an appetent subject, corresponds to the third term of the series, that which receives, but does not communicate, motion.

b 19. ἡδη seems to imply that up to this point A. has been dealing with mental activity.

b 19. σωματικόν. In the bodily instrument employed by ὁρεξίς, the faculty of soul, A. finds a fresh example of τὸ κινεῖν καὶ κινούμενον: but, whereas ὁρεξίς is wholly psychical, the bodily instrument is wholly corporeal. Thus good or apparent good moves the faculty of ὁρεξίς, the latter moves the bodily instrument, and this in turn sets the animal in motion. Cf. *De Gen. An.* II, 6, 742 a 22 δύο δὲ διαφορὰς ἔχει καὶ τὸ οὐ ἕνεκα· τὸ μὲν γὰρ ἐστὶν ὅθεν ἡ κίνησις, τὸ δὲ ὃ χρῆται τὸ οὐ ἕνεκα. λέγω δ' οἷον τό τε γεννητικὸν καὶ τὸ ὀργανικὸν τῷ γενομένῳ· τούτων γὰρ τὸ μὲν ὑπάρχειν δεῖ πρότερον, τὸ ποιητικόν, οἷον τὸ διδάξαν τοῦ μανθάνοντος, τοὺς δὲ αὐλοὺς ὕστερον τοῦ μανθάνοντος αὐλεῖν· περιέρχον γὰρ μὴ ἐπισταμένους αὐλεῖν ὑπάρχειν αὐλοῦς. The Greek commentators identify this

σωματικόν, this corporeal instrument, with connatural spirit, *σύμφυτον πνεῦμα*: Them. 121, 3—18 H., 221, 26—222, 17 Sp., Simpl. 303, 31 sqq., Philop. 587, 24—589, 26, no doubt following *De Motu An.* c. 10, 703 a 9—28. For the part assigned by A. to *σύμφυτον πνεῦμα* in sensation and the transmission of sense-images see Beare, *Greek Theories*, pp. 333—336.

b 19 διὸ ἐν τοῖς κοινοῖς... 20 περὶ αὐτοῦ. Cf. *De Part. An.* I. 3, 643 a 35 sqq. Philop. thinks the reference is to *Hist. An.*: Trendl., arguing from the cross reference in *De Motu An.* 6, 700 b 4 περὶ μὲν οὖν ψυχῆς, εἴτε κινεῖται ἢ μὴ, καὶ εἰ κινεῖται, πῶς κινεῖται, πρότερον εἴρηται ἐν τοῖς διωρισμένοις περὶ αὐτῆς, concludes that A. intended to treat of the subject in a separate treatise. The treatise which has come down to us in the Aristotelian corpus is generally believed to be a later Peripatetic compilation.

b 21 νῦν δὲ... 22 γιγλυμῶς. The mechanism of animal motion is here given in outline. We may profitably compare the fuller treatment in *De Motu An.*, especially c. 1, 698 a 14—b 4, c. 7, 701 a 36—b 32, c. 8 throughout, 701 b 33—702 b 11, from which Them. supplements his paraphrase. All animal movement is by pushing and pulling. This implies a fixed central point from which the moveable member works backward and forward to push and pull the creature along. Thus with the elbow joint the upper part of the arm, being stationary, moves the lower part up and down. The elbow joint serves as a sort of fixed centre from which to work, where the stationary ἀρχὴ and the moveable τελευτὴ meet. They form one complex whole, being one and the same, locally or in magnitude inseparable, yet different logically or in aspect. Cf. *De Part. An.* II. 9, 654 a 35 ἵνα χρῆται ἡ φύσις [int. τῷ ὁστέῳ] καὶ ὡς ἐνὶ καὶ συνεχεῖ καὶ ὡς δυοὶ καὶ διηρημένοις πρὸς τὴν κάμψιν, *Μετὰφρ.* 1016 a 12—17.

b 21. τὸ κινεῖν ὀργανικῶς ὅπου. Cf. Them. 121, 5 H., 221, 28 Sp., who supplies θετέον: ἐν τοιοῦτῳ θετέον μέρει τοῦ σώματος, ἐν οἷῳ δύναται ἂν καὶ ἀρχὴ καὶ τελευτὴ τὸ αὐτὸ εἶναι, λόγῳ μὲν ἕτερα ὄντα μεγέθει δὲ ἀχώριστα.

b 22. ἀρχὴ καὶ τελευτὴ τὸ αὐτό. By ἀρχὴ is meant the stationary point or pivot, τὸ ἡρεμοῦν, by τελευτὴ that which is moved, δὲ κινεῖται. In the hinge-joint, say of the elbow, the concave surface or socket is the pivot and relatively at rest. The convex surface, or ball fitted in the socket, is left free to move. As motion begins from the concave and terminates in the convex, the former is called ἀρχὴ and the latter τελευτὴ.

b 22. οἷον ὁ γιγλυμῶς, "for instance, the hinge-joint." The term is found in the Hippocratean writings 411, 12 (p. 111 ed. Kühn) in the tract περὶ τόπων τῶν κατ' ἀνθρώπων. We there find πρὸς δὲ τὸ γόνυ τὸ ὁστέον τοῦ μηροῦ τοῖόνδ' ἐστὶ δίκραιον. τῷ δὲ δίκραιῳ τοῦτῳ τὸ ὁστέον ἢ κνήμη καλεομένη οἷον ἐν γιγλυμῶ ἐνῆρμοςται. In *Hist. An.* IV. 4, 529 a 32 τὸ γιγλυμῶδες is the hinge of the bivalves, a species of shellfish: τὰ δὲ δίθυρα ἐν τῷ γιγλυμῶδει [int. τὴν μήκωνα ἔχει]. The more common term with A. is καμπή, *Μετὰφρ.* 1040 b 12 τῷ ἀρχαῖς ἔχειν κινήσεως ἀπὸ τινος ἐν ταῖς καμπαῖς. Alex. Aphr., as we learn from Simplicius 304, 12 sq., explained as follows ὅτε περὶ μίαν περόνην ἐστάσαν κρίκος περιεκείμενος αὐτῇ εἶσω τε καὶ ἔξω στρεφομένη τῇ θύρᾳ συνεργεῖ. Consequently Alex. treated the words immediately following, 433 b 24 sq., as parenthetical: (Simpl. 304, 26) οὐκ ἀκούει ὡς ἐπὶ τοῦ γιγλυμῶς τὰ ἐφεξῆς ἐπαγόμενα, τὸ ἀχώριστα εἶναι τῷ μεγέθει τὴν ἀρχὴν καὶ τὸ τέλος, καὶ τὸ ἡρεμοῦν καὶ κινούμενον, ἀλλ' ὡς ἐπὶ ἡμῶν ταῦτα εἰρησθαι, ὅταν τῶν ἀντικειμένων μερῶν, λέγω δὲ τῶν ἄνω καὶ κάτω ἢ τῶν δεξιῶν καὶ ἀριστερῶν καμπτομένων, καὶ θατέρου μένοντος τῶν ἀντικειμένων, θατέρου δὲ κινουμένου, ἢ μεταξὺ ἐπιφάνεια ὡς πέρασ μέν τοῦ κινουμένου <κινουμένη> ἢ καὶ αὐτῇ. Plutarch (ap. Simpl. 304, 9 sqq.) understood by γιγλυμῶς in the present context δύο κρίκων συμπλοκή, τοῦ ἐτέρου εἰς τὸν λοιπὸν ἐμβεβλημένου, ὅτε τὸ κυρτὸν τοῦ ἐτέρου τοῦ κοίλου ἐφάπτεται τοῦ

λοιποῦ. Philop. follows Plutarch, but substitutes ὁστουν for κρίκος: 588, 17 γιγγλυμὸς δὲ ἐστὶ σύνταξις δύο ὁστέων, τοῦ κυρτοῦ ἐμβάλλοντος εἰς τὴν κοιλότητα. καὶ ταῦτα μὲν τῷ λόγῳ διάφορά ἐστιν (ἐν ἄλλῃ γὰρ σῶματί ἐστι τὸ κυρτὸν καὶ ἐν ἄλλῃ τὸ κοῖλον) τῷ δὲ ὑποκειμένῳ τὰ αὐτὰ εἰσιν· συναρμόζουσι γὰρ ἀλλήλοις, καὶ γίνεται ἡ κίνησις οὐ τῶν δύο, ἀλλὰ τοῦ κυρτοῦ μόνου· περὶ τὸ κοῖλον γὰρ μένον καὶ ἀκίνητον ὃν ἡ τοῦ κυρτοῦ γίνεται κίνησις. τοιαύτη δὲ ἐστὶν ἡ κατ' ἀγκῶνα τῶν χειρῶν ἡμῶν διάρθρωσις.

b 24. διὸ τὸ μὲν ἡρέμει τὸ δὲ κινεῖται. Prof. Bywater makes this "a mere parenthesis, a sort of corollary to what precedes." τὸ μὲν = ἡ ἀρχὴ τῆς κινήσεως, τὸ δὲ = ἡ τελευτή. Thus the upper part of the arm relatively at rest is the ἀρχὴ which moves the lower part up and down. Cf. Them. 121, 12 H., 222, 9 Sp.: περὶ γὰρ τὴν περόνην μένουσαν οἱ γιγγλυμοὶ παραλλὰξ κινούνται. λόγῳ... 25 ἀχώριστα. As Prof. Bywater has seen, this refers to τὸ κυρτὸν καὶ τὸ κοῖλον which make up the hinge-joint τὸ κινοῦν ὀργανικῶς. This implies that the two surfaces in contact are parts of one complex whole, being locally and in extension inseparable, and therefore one and the same thing. For the formula see notes on 429 a 11, 413 b 14: cf. also 432 a 20.

b 25. πάντα...κινεῖται. This sentence gives the reasons for the statement 433 b 21 τὸ κινοῦν ὀργανικῶς ὅπου ἀρχὴ καὶ τελευτὴ τὸ αὐτό: "it is no part of the illustrative digression on the subject of the hinge-joint, but refers back to what precedes it; and it is not to be taken as true of motion generally, but only of the motion of animals" (Bywater, *Arist., Journ. of Philol.* vol. XVII., p. 65). Cf. *De Incessu An.* 2, 704 b 22 πρὸς δὲ τούτοις ὅτι τῶν κινήσεων τῶν κατὰ τόπον ἀρχαὶ ὄσις καὶ ἔλξις. In *Phys.* VII. 2, 243 a 17 sqq. four varieties of local movement are enumerated, ὄχησις and δίνησις being added after ὄσις and ἔλξις, but (243 b 19) ὄχησις is κατὰ συμβεβηκὸς κίνησις due to one of the other three varieties and (244 a 2) δίνησις σύγκειται ἐξ ἔλξεως τε καὶ ὤσεως. Cf. *De Mot. An.* 10, 703 a 19 τὰ δ' ἔργα τῆς κινήσεως ὄσις καὶ ἔλξις, ὥστε δεῖ τὸ ὄργανον αὐξάνεσθαι τε δύνασθαι καὶ συστέλλεσθαι.

b 26 διὸ δεῖ ὥσπερ...27 κίνησιν. The circle is supposed to be generated by the motion of a point which is always at a given distance from another fixed point, the centre of the circle. When such a circle moves, as when a wheel revolves, the centre is at rest relatively to the circumference. Similarly, both in the animal body as a whole and in the organic parts, i.e. the joints, there must be some point or pivot relatively stationary for the animal body as a whole: this was to A. the heart. Cf. *De Part. An.* III. 3, 665 a 10 ἡ μὲν γὰρ καρδία ἐν τοῖς ἔμπροσθεν καὶ ἐν μέσῳ κείται, ἐν ᾗ τὴν ἀρχὴν φάμεν τῆς ζωῆς καὶ πάσης κινήσεως τε καὶ αἰσθήσεως, *De Mot. An.* I. 698 a 14 sqq., Them. 121, 15 ff., 222, 13 Sp. ὥσπερ οὖν ἐν κύκλῳ μένειν δεῖ τὸ σημεῖον καὶ ἐντεῦθεν ἀρχεσθαι τῆς κινήσεως τὴν περιφέρειαν, οὕτω καὶ ἐν τῷ ζῳῳ μένειν ἀνάγκη τι ἐν τῷ μέσῳ καὶ παρὰ τούτου καὶ ἀπὸ τούτου τὴν κίνησιν γίνεσθαι τῶν μερῶν, *ib.* 121, 7 H., 222, 2 Sp. τοιοῦτος δὲ ὁ περὶ τὴν καρδίαν τόπος ἐστίν· αὕτη γὰρ ἀρχὴ καὶ τελευτὴ τῶν τε δεξιῶν καὶ τῶν εὐωνύμων καὶ τῶν ἄνω καὶ κάτω, καθ' ἃ τοῖς ζῳοῖς ἡ κίνησις.

b 28. ἑαυτοῦ κινητικόν. Cf. *Phys.* VIII. 2, 253 a 14 sq.

b 28. ὁρεκτικὸν δὲ οὐκ ἄνευ φαντασίας; int. ἐστὶ. We have been prepared for an extension of the meaning formerly given to φαντασία. In III. 3, § 13 it was connected with sensation. Now it seems as if high mental operations, such as λογισμός, imply pictorial images. But λογισμός is an exercise of the discursive intellect, διάνοια, and we have been told 431 a 14 that for διάνοια sensations are replaced by images: τῇ δὲ διανοητικῇ ψυχῇ τὰ φαντάσματα οἷον αἰσθήματα ὑπάρχει, 432 a 8 ὅταν τε θεωρῇ, ἀνάγκη ἅμα φαντάσματι θεωρεῖν. Cf. *ib.* a 13 ἡ οὐδὲ τὰλλα φαντάσματα, ἀλλ' οὐκ ἄνευ φαντασμάτων.

b 30. ταύτης μὲν οὖν, i.e. τῆς αἰσθητικῆς φαντασίας.

## CHAPTER XI.

**433 b 31—434 a 21.** To take the case of imperfect or undeveloped animals, possessing only the sense of touch. What is the moving power in them? Is it or is it not possible that such creatures should possess imagination and desire? Plainly they feel pleasure and pain and, this being so, must feel desire also. How can they have imagination? We reply: the movements of these inferior creatures are so vague and indeterminate that, if they possess the power in question, it can only be in a vague and indeterminate manner [§ 1]. Images of sense are found in all animals. But rational animals have also deliberative imagination, calculation being required in the selection of means to a given end; a single standard, moreover, being necessary if we are to determine which is the greater good to pursue. Hence it is that the less perfect animals seem to be without opinion, as they do not possess that form of imagination which is based upon the syllogism and which presupposes opinion [§ 2]. Thus appetency does not imply deliberation. In the struggle with rational wish it sometimes prevails, sometimes is vanquished, under the conditions of incontinence. In fact, the higher principle has a natural supremacy and determines movement, as is illustrated by the motions of the spheres [§ 3]. The cognitive faculty is not in motion, but stationary. In the practical syllogism the major premiss is a general proposition, while the minor deals with particular facts. The major premiss is of the following form: "A person, one of such and such a character, should do such and such an act." The minor asserts: "This is such and such an act and I am of the character defined." It is this particular minor rather than the general proposition which causes us to act; yet in different ways both may be said to do so [§ 4].

**433 b 31.** *περὶ τῶν ἀτελῶν.* This does not mean maimed or mutilated animals (*πηρώματα*) which have not the full development of their kind, but the lowest types of animals, which are less fully developed than other kinds.

**434 a 1** *πότερον...2 καὶ ἐπιθυμία.* It would seem as if *ἐπιθυμία* here replaced *ὄρεξις* in the narrowest sense, as the term is used in 433 a 6—14. It will be remembered that in 413 b 19—23 (cf. 413 b 8 sq.), where A.'s attention is directed even to some of the lowest forms of animal life, e.g. *insecta*, which live when divided, the powers of sensation, local movement, imagination and desire are attributed to them; the proof being that sensation implies pleasure and pain, while pleasure and pain imply desire (413 b 23 sq.). But in 414 b 3—16 animals which have only the sense of touch are credited with *ὄρεξις*, but their possession of *φαντασία* is reserved for future discussion, while in 415 a 10 sq. we have the definite statement that some mortal things, obviously animals from the context, do not even possess *φαντασία*, much less *λογισμός*. A.'s solution is that the doubt does not affect the existence but rather the degree and kind of imagination possessed by the lowest forms of animal life. Their movements are vague and undetermined, *κινεῖται ἀόριστως*. Cf. *Simpl.* 307, 9 *δοτέον οὖν ἐξ ἀνάγκης αὐτοῖς τὴν φαντασίαν, ὃ δὲ καὶ Ἀριστοτέλης συλλογίζεται διὰ τοῦ λύπην καὶ ἡδονὴν ἐνεῖναι τοῖς τοιοῦτοις ζῴοις.*

**a 5.** *καὶ ταύτ'*, int. *φαντασία* with its *φαντάσματα* and *ὄρεξις* in its lowest form of *ἐπιθυμία*. Cf. *Them.* 122, 11 H., 224, 1 Sp. *φαντάζεται ἀόριστως, ὥστε ἔχει μὲν φαντασίαν, ἀδιάρθρωτον δὲ καὶ συγκεχυμένην, καθάπερ δὲ καὶ τὴν αἴσθησιν· καὶ γὰρ ταύτην ἔχει ἀτελῆ καὶ ἀόριστον.* *ἀόριστως*, cf. *Ind. Ar.* 70 b 42 "*ἀόριστον dicitur id, quod vel nondum circumscriptum est certis finibus vel non potest*

certis finibus circumscribi." Cf. Philop. 592, 29 ἀορίστως λέγει ἀντὶ τοῦ ἀμυδρῶς καὶ πεπλανημένως.

a 6. ὥσπερ εἴρηται, in 433 b 29 sq.

a 7. ἡ δὲ βουλευτική, int. φαντασία. This is the third grade of imagination, distinct alike from the αἰσθητική φαντασία of the normal animal and from that fainter, vaguer type of φαντασία which A. has just claimed for the lower species. ἐν τοῖς λογιστικοῖς, int. ζώοις, i.e. in those that possess reason (λόγος). Deliberation is confined to man and, like other modes of discursive thought, employs pictorial images. For an instance of their application see 431 b 6 sqq. and *Eth. Nic.* 1112 b 15—20. See also *note* on 433 a 15, τῷ τέλει. In 431 b 6 sqq. the whole passage is concerned with the mental images of the type of βουλευτική φαντασία so graphically described *Eth. Nic.* loc. cit. and with what is obviously an operation of διάνοια πρακτική.

a 7 πότερον γάρ...10 ποιεῖν. I have enclosed all this in brackets in order to make clear what in my opinion is the antecedent of τοῦτο, viz. the fact that the lower animals possess imagination only in one of the two forms in which it is found in man.

a 8. λογισμοῦ ἤδη ἐστὶν ἔργον. If speculative thought involves images, they are just as indispensable to practical thought and deliberation. Cf. *De Mem.* 2, 453 a 13 καὶ γὰρ τὸ βουλευέσθαι συλλογισμὸς τίς ἐστίν, *Eth. Nic.* 1112 b 11 sqq. ἐν: neuter, meaning a unit or standard. Deliberation implies comparison, which is impossible if there be no fixed standard. For One in the sense of unit or standard see *inprimis Metaph.* 1052 b 11—1053 b 8.

a 9. δύναται, int. τὰ λογικὰ ζῶα, man, in virtue of possessing deliberation (433 b 3) and deliberative imagination. So *Simpl.* 309, 18—32, who uses masculine participles. Philop. 592, 35—593, 4 prefers to regard ἡ βουλευτική φαντασία as subject. ἐν, int. φάντασμα.

a 10 καὶ αἴτιον τοῦτο...11 ἔχειν. The subject of ἔχειν is doubtless τὰ ἄλλα ζῶα, cf. *supra* a 6, i.e. τὰ ἄλογα ζῶα. Bywater supposes the words to have fallen out of the text, thinking it unlikely that they can be "readily supplied by the mind" at this interval. Probably to meet this difficulty M. Rodier suggests that the words (a 7) ἡ δὲ βουλευτική...(a 9) ἐκ πλειόνων φαντασμάτων ποιεῖν form a parenthesis. But see *note* on πότερον a 7 *supra*. Anyhow, what A. means to say here is clear. The lower animals seem, at first sight, to be destitute of "judgment" (δόξα) because incapable of ratiocination (συλλογισμὸς), and therefore unable to form images following on ratiocinations. The close connexion between φαντασία and ὑπόληψις, of which latter δόξα is a species, was emphasised 427 b 16. There is a similar statement in *Eth. Nic.* 1147 a 35 ὥστε συμβαίνει ὑπὸ λόγου πως καὶ δόξης ἀκρατεῦσθαι, οὐκ ἐναντίας δὲ καθ' αὐτήν, ἀλλὰ κατὰ συμβεβηκός—ἡ γὰρ ἐπιθυμία ἐναντία, ἀλλ' οὐχ ἡ δόξα—τῷ ὁρθῷ λόγῳ. ὥστε καὶ διὰ τοῦτο τὰ θηρία οὐκ ἀκρατῆ, ὅτι οὐκ ἔχει καθόλου ὑπόληψιν ἀλλὰ τῶν καθ' ἕκαστα φαντασίαν καὶ μνήμην.

a 11. τὴν ἐκ συλλογισμοῦ, int. φαντασίαν [not δόξαν], i.e. what has been called above τὴν βουλευτικὴν φαντασίαν and 433 b 29 τὴν λογιστικὴν φαντασίαν. From *De Mem.* 2, 453 a 13, too, cited in *note* on a 8 *supra*, we know that "syllogism" of some sort is involved in deliberation.

a 11. αὐτὴ δὲ ἐκείνην, int. ἔχει. Deliberative imagination implies opinion or judgment. Deliberation will issue in some conclusion, as the debate of the Homeric chiefs ended in the decision which they announced to the people: *Eth. Nic.* 1113 a 8 sq.

a 12. διὸ τὸ βουλευτικὸν οὐκ ἔχει ἢ ὀρεῖς. Once more the ambiguous term ὀρεῖς confronts us without the qualification which we find, e.g. in *Rhet.* I. 10,

1369 a 1 sq. δι' ὄρεξιν [int. πράττουσι] τὰ μὲν διὰ λογιστικὴν ὄρεξιν τὰ δὲ δι' ἄλογον. It is here used, as in 433 a 6, 8, for ἄλογος ὄρεξις, i.e. in particular, θυμὸς καὶ ἐπιθυμία. The conclusion is that irrational desire does not imply the deliberative faculty. The alternative is to understand καθ' ἐαυτήν, appetency as such, unless A. intended to qualify the sentence, e.g. by adding "in irrational animals." Action may be purposive or impulsive, and purpose implies previous deliberation. See *Eth. Nic.* 1113 a 2 βουλευτὸν δὲ καὶ προαιρετὸν τὸ αὐτό, πλὴν ἀφωρισμένον ἥδη τὸ προαιρετὸν· τὸ γὰρ ἐκ τῆς βουλῆς κριθέν προαιρετὸν ἔστιν, *ib.* 1135 b 10 προελόμενοι μὲν [int. πράττομεν] ὅσα προβουλευσάμενοι, ἀπροαίρετα δὲ ὅσ' ἀπροβούλευτα. In 1139 a 23 προαίρεσις = ὄρεξις βουλευτική. Cf. Zeller, *Aristotle*, Eng. Tr. II., p. 118 and notes.

a 12 νικᾷ δ' ἐνίοτε...13 ταύτην. What is the subject to νικᾷ? I assume it to be ἡ ὄρεξις in the narrower sense. The impulsive and irrational desire sometimes prevails over βούλησις, which, as we know, is restricted to rational beings (432 b 5) and is always of the good (*Rhet.* I. 10, 1369 a 2 sqq.). Thus νικᾷ τὴν βούλησιν [int. ἡ ἄλογος ὄρεξις] gives a perfectly clear sense and ὅτε δ' ἐκείνη ταύτην, ἡ ὄρεξις τὴν ὄρεξιν will mean "at other times the rational desire, βούλησις, prevails over the irrational ὄρεξις, one appetency thus prevailing over another appetency," in the second case as much as the first. The words ἡ ὄρεξις τὴν ὄρεξιν form a sort of *résumé* of both cases and serve to remind us that the rational βούλησις, as well as the irrational ἐπιθυμία, is ὄρεξις. The first clause is exemplified in ἀκρασία in the strict or narrower sense, the second in ἐγκράτεια, both clauses being included under ἀκρασία in the wider sense. The words καὶ κινεῖ present some difficulty, for hitherto what is set in motion has been the ζῶν. Cf. 433 a 23 ἡ γὰρ βούλησις ὄρεξις· ὅταν δὲ κατὰ τὸν λογισμὸν κινῆται, καὶ κατὰ βούλησιν κινεῖται (int. τὸ ζῶν). See the comments of Alex. Aphr. referred to in note on 433 b 17. Prof. Bywater (*Journ. of Philol.* vol. XVII., p. 66) takes νικᾷ as intransitive, and continues: "The words καὶ κινεῖ τὴν βούλησιν are thrown in parenthetically to explain the consequence of νικᾷ, without affecting the construction of what follows, which proceeds just as if we had νικᾷ and nothing more than that: another instance of the same kind is in III. 7, 431 b 7, λογίζεται καὶ βουλευέται τὰ μέλλοντα πρὸς τὰ παρόντα—where the construction of the words is, λογίζεται τὰ μέλλοντα πρὸς τὰ παρόντα, with καὶ βουλευέται thrown in to show that λογίζεται practically means βουλευέται." I so far agree as to think καὶ κινεῖ is thrown in as a sort of afterthought to νικᾷ almost in the sense of νικᾷ τὴν βούλησιν ὥστε κινεῖν but I take τὴν βούλησιν as the object to νικᾷ (cf. *De Gen. An.* IV. 4, 770 b 16 ὅταν μὴ κρατήσῃ τὴν κατὰ τὴν ὕλην ἡ κατὰ τὸ εἶδος φύσις), for without this object the next clause ὅτε δ' ἐκείνη ταύτην is meaningless. There seems to be no other instance of κινεῖν τὴν βούλησιν. M. Rodier makes τὸ βουλευτικὸν the subject of νικᾷ and translates "Mais celle-ci," i.e. la faculté de délibération, "chez l'homme, triomphe quelquefois [du désir appétitif] et meut le désir raisonné." In this way he makes ὅτε δ' ἐκείνη ταύτην, ὥσπερ σφαῖρα, ἡ ὄρεξις τὴν ὄρεξιν alone depict ἀκρασία, which he interprets strictly as the state of the ἀκρατής. Simplicius, however, is probably right in giving to ἀκρασία a wider sense, conflict of desires generally, (310, 28) καὶ ἔοικεν ἀκρασίαν νῦν καλεῖν πᾶσαν τὴν διαμάχην, κἂν μὴ τὸ φαυλότερον ἀλλὰ τὸ κρείττον ἐπικρατῇ, καθ' ὅσον ὅλως μὴ ἐνὸς τὸ κράτος, ἀλλὰ ποτὲ μὲν θατέρου, ποτὲ δὲ τοῦ λοιποῦ. "But in the abnormal condition called incontinence (ὅταν ἀκρασία γένηται I. 14) the soul is in a state of anarchy, first one desire getting the upper hand and then another, at one moment desire A overpowers desire B, at another desire B overpowers desire A (ὅτε δ' ἐκείνη ταύτην I. 13)—the will being moved by whichever happens to have the mastery at the time (νικᾷ, καὶ κινεῖ τὴν βούλησιν), so that it is simply

tossed to and fro like a shuttle-cock or ball (*ὥσπερ σφαῖρα* l. 13) instead of being moved by some rational motive" (Bywater, *Journ. of Philol.* vol. XVII., p. 66). It may be objected that the use of a transitive verb like *κινεῖ* in a *δὰ μέσον* construction immediately before an accusative case is very awkward, but the fact that we are discussing *τί τὸ κινοῦν ἐστίν* helps to make it possible: and we have as a matter of fact a similar absolute use two lines lower down, a 15, *καὶ κινεῖ* and again in a 19. In the present case a 13 *κινεῖ* must be understood to mean "produces motion," i.e. in the animals.

a 13. *ὥσπερ σφαῖρα*. The extreme brevity of this illustration, even if we take into account the words *φύσει δὲ...κινεῖσθαι* (a 14 sq. *infra*), adds to the obscurity of the passage. On the whole, nothing seems to be gained by departing from the traditional view that *σφαῖρα*=sphere, which we learn both from Themistius, who adopts it, and from Simplicius, who abandons it and takes *σφαῖρα*=ball: Them. 121, 34 H., 223, 10 Sp. *κινεῖ δὲ ἡ κρατοῦσα* [int. *ὄρεξις*] *τὴν κρατουμένην οὐ παύουσα τῆς ὁρμῆς ἀλλὰ συμπεριάγουσα ἑαυτῇ, ὥσπερ ἐπὶ τῆς σφαίρας τῆς οὐρανίας ἢ τῶν ἀπλανῶν τὴν τῶν πλανήτων (sic Heinze) οὐχ ἴστησιν, ἀλλὰ κινουμένη ἰδίαν κίνησιν ὁμῶς ἑαυτῇ συμπεριάγει. ἐπὶ μὲν οὖν τοῦ παντὸς ἡ φύσει κρείττων αἰεὶ κρατεῖ (ἢ γὰρ ἀνωτάτῳ φύσει ἀρχικωτέρα). ἐπὶ δὲ τῶν ἀνθρώπων ἔσθ' ὅτε ἡ φύσει κρείττων ἡττᾶται ὥσπερ ἐν ταῖς ἀκρασίαις. καὶ τρεῖς ἤδη τμηκαῦτα κινήσεις εἴποισι ἂν εἶναι ἐν τῇ ἀνθρώπῳ, δύο μὲν τὰς τῶν ὀρέξεων, μία δὲ τὴν τοῦ ἀνθρώπου ὑπ' ἀμφοῖν ἀντισυμπεριήσιν, Simpl. (310, 30) οἷ γε μὴν ἐξηγηταὶ (probably Alexander and Plutarch) τὴν τῆς σφαίρας εἰκόνα ἐπὶ τῶν οὐρανίων ἀκούουσιν, ὡς τῆς ἀπλανοῦς καὶ τὴν ἰδίαν κίνησιν ἐνδιδοῦσης ταῖς πλανωμέναις, ἵνα καὶ ἐκάστη τῶν πλανωμένων ἰδίαν κινήται κίνησιν καὶ αὐτὴ ἡ ἀπλανὴς τὴν ἑαυτῆς, καὶ τρίτη ἡ ἀπὸ τῆς ἀπλανοῦς ἐνδιδομένη κρατῇ τῆς δευτέρας. ἐπειδὴ φύσει, τουτέστι κατὰ φύσιν ἢ βούλησιν κρείττων καὶ ἀρχικωτέρα, ἅτε καὶ ἀφ' ἑαυτῆς ὅλη δυναμένη ἐγείρεσθαι καὶ ὡς τὸ ἀγαθὸν σκοπὸν τιθεμένη, κατὰ φύσιν ἂν αὕτη κινεῖται τὴν δευτέραν. It will be noticed that Simplicius gives a different explanation of the words *φύσει δὲ κτέ.* (434 a 14) and does not, like Themistius, work them into the simile from the spheres. Yet it is noteworthy to find the unusual word *φοράς*, which is peculiarly applicable to the heavenly spheres, in place of *κινήσεις*. Cf. e.g. *Metaph.* 1073 b 17 sqq., 22 sqq., 1074 a 4 sq., 24—31.*

The hypothesis that the fixed stars were, as their name implies, fastened in the celestial sphere, which revolved uniformly round the earth supposed at rest, accounted sufficiently for their apparent motions. But to explain the apparent motions of the planets, including the sun and moon, which were planets or wandering bodies to the ancients, this hypothesis had to be modified. Besides the sphere in which the planet was set, other spheres were assumed to regulate it. To A., then, the fabric of heaven connotes spheres each with its own peculiar motion, fitting closely so as to leave no empty space between them and connected in such a way that the inner or lower are carried round by the outer or higher. The illustration turns on this last assumption. When *βούλησις* controls *ἄλογος ὄρεξις* it is like the outermost celestial sphere which imparts its motion to all the inner and lower spheres, and when one *ὄρεξις* prevails over another after conflict, i.e. when there is *ἀκρασία* in the wider sense, the resultant action of the man is like the movement of one of the planets which is regulated by several spheres, including, of course, the outermost celestial sphere.

Simplicius (who has been followed by Wallace, Bywater and Rodier) was aware of this explanation, which did not satisfy him. He refers the simile to the game of ball, when the ball is thrown from one player to another. Success depended upon the violence of the stroke, (310, 26) *νικᾷ, ὡς ἐπὶ τῶν σφαιριζόντων*

δ σφοδρότερον πλήξας. Apparently only two players were assumed and the object of each was to throw the ball so violently that the other failed to catch it. This Simpl. applied both to the ἐγκρατής and to the ἀκρατής: sometimes the worse, sometimes the better nature prevails. On this interpretation, the will is apparently the ball or shuttle-cock (σφαῖρα) "being moved by whichever happens to have the mastery at the time" (Bywater), and the conflicting players are the different irrational desires. But then βούλησις itself is an ὄρεξις, though a rational desire, and the simile would not account for the case when βούλησις determines conduct, and we must strain the interpretation of the simile if it is to include ἐγκράτεια. The main objection is the case of σφαῖρα, which should, if this explanation be accepted, be altered with cod. γ to σφαῖραν. In its present position it should illustrate τὸ νικῶν καὶ κινεῖν rather than τὸ κινούμενον. Moreover on this view the words (a 14 sq.) φύσει δὲ... ἤδη κινεῖσθαι have nothing to do with the simile. Again, in the words of Trend.: Consilium et cupidinem inter se fluctuare, ut nova momenti vis accedere debeat, ne verbo quidem significatur.

a 14 φύσει δὲ... 15 καὶ κινεῖ. The introduction of the celestial sphere, even as an illustration, calls for an important qualification. There is no such thing as ἀκρασία or vacillation or contingency in the celestial region. The sphere of the fixed stars is never deposed from its rightful place as prime moved movent. Hence αὖτε is emphatic, in contrast with b 12 ἐνίοτε above and b 13 ὅτε δ'. With ἡ ἄνω we are inclined to understand σφαῖρα, but φορὰ would come to the same thing, and ἡ ἄνω φορὰ is frequently found, e.g. in *Meteorologica*. It should be remarked that the whole complicated system of celestial spheres was excogitated simply and solely because certain of the heavenly bodies present to the observer very irregular apparent motions. "Accordingly, so far as the movements of the separate stars varied from a perfect circle, or progressed at unequal rates, they were regarded as composite movements capable of being analysed into pure and uniform rotations. Therefore," free motion in space being in that day inconceivable, "each star required as many spheres as were found necessary for the resolution of its apparent movement into pure circular revolutions" (Zeller, *Aristotle*, Eng. Tr. I., p. 494). Cf. *Metaph.* 1073 b 9 πλείους γὰρ ἕκαστον φέρεται μιᾷ τῶν πλαναμένων ἡστρον. The rotation, φορὰ, is the scientific fact, the sphere being supposed necessary if we are to conceive it. By ἄνω is meant, as in 418 b 9, 12, "at the circumference of the universe," the higher or celestial region, contrasted with the sublunary region of mutability. For κινεῖ with φορὰ cf. *Meteor.* I. 5, 342 a 27 πάντων δὲ τούτων αἰτίων... ὥς δὲ τὸ κινεῖν ὅτε μὲν ἡ ἄνω φορὰ. The sphere of the fixed stars is a movent of every one of the planets, according to the fantastic hypotheses of Eudoxus and Callippus, provisionally accepted in *Metaph.* Δ., c. 8.

Them. understands the sentence as referring to the physical universe: 121, 37 sq. H., 223, 15 sq. Sp. ἐπὶ μὲν οὖν τοῦ παντός ἡ φύσει κρείττων αἰεὶ κρατεῖ (ἡ γὰρ ἀνωτάτω φύσει ἀρχικωτέρα), "in the universe at large the naturally stronger impulse always prevails, for the impulse at the very summit (or exterior) is naturally more adapted to control," i.e. the revolution of the first heaven controls the movement of the rest of the universe. Whether Them. intended κίνησις or ὄρεξις to be supplied with ἡ φύσει κρείττων and ἡ ἀνωτάτω makes no difference. Cf. *De Caelo* II. 5, 288 a 3 ἔστι δὲ καθάπερ τῶν ἐπὶ τῆς εὐθείας φορῶν ἡ πρὸς τὸν ἄνω τόπον τιμωτέρα (θειότερος γὰρ δ' ἄνω τόπος τοῦ κάτω). For the views of Alex. Aphr. upon the celestial motions see Simpl. *in Phys.* 1261, 30—1262, 2. Simplicius appears to understand ἡ βούλησις by ἡ ἄνω, if his words (310, 34) ἐπειδὴ φύσει, τουτέστιν κατὰ φύσιν ἡ βούλησις κρείττων καὶ ἀρχικωτέρα



refer to this passage. He continues *ἀτε καὶ ἀφ' ἐαυτῆς ὅλη δυναμένη ἐγείρεσθαι καὶ ὡς τὸ ἀγαθὸν σκοπὸν τιθεμένη, κατὰ φύσιν ἂν αὕτη κινεῖ τὴν δευτέραν.*

a 15. *ὥστε τρεῖς φορὰς ἤδη κινεῖσθαι.* I take this statement as referring, like the rest, to the celestial movements. Any single planet, however irregular its motion, has but a single path, but we cannot explain its motion unless we assume at least three simultaneous component rotations, of which its single path is the resultant. The simplest assumption of Eudoxus resolved the motion of the sun and moon into three rotations. Cf. *Metaph.* 1073 b 17—21: Eudoxus supposed that the motion of the sun and moon respectively depended on three spheres, whereof the first was that of the fixed stars, the second belonged to the circle which passes through the signs of the zodiac, and the third belonged to the ecliptic, which crosses latitudinally the course of the signs. The first of these apparent motions is due to the diurnal rotation of the earth on its axis, the second to the annual revolution of the earth round the sun, the third to the inclination of the earth's axis. Cf. Zeller, l.c. I., p. 499 sqq. The fact that in *Metaph.* Δ., c. 8 A. is not content with three spheres for the sun and moon is no argument that he may not have used a current hypothesis for purposes of illustration here. If this be so, it seems idle to seek any exact correspondence between the three rotations of the sun and the tendencies or forces which alternately control the irregular motion of the ἀκρατής. The broad fact of similarity stands out clearly, viz. that the actual course of the sun in its orbit is very different from that which it would take if any one of the three forces acted solely upon it.

Them. in his paraphrase of the sentence adds *ἐν τῷ ἀνθρώπῳ*: 122, 2 H., 223, 18 Sp. *καὶ τρεῖς ἤδη τηλικαῦτα κινήσεις εἴποις ἂν εἶναι ἐν τῷ ἀνθρώπῳ, δύο μὲν τὰς τῶν ὀρέξεων, μίαν δὲ τὴν τοῦ ἀνθρώπου ὑπ' ἀμφοῖν ἀντισπωμένην.* Apparently he makes the three *φοραὶ* to be (1) that to which λόγος and (2) that to which ἐπιθυμία prompts and (3) that of the man who is influenced by both impulses which draw him in opposite directions. Cf. Zeller, l.c. p. 500, according to whom all the planetary spheres except the first and second, i.e. in the simplest case, that of the sun, the third alone, "were meant to explain the variations which are observable between the apparent motion of the stars and that produced by the two first spheres." Them.'s explanation, then, easily lends itself to the supposition that the three *φοραὶ* are concurrent and simultaneous, being the resolution of one irregular motion into three rotations. Simplicius, however, supposes the three *φοραὶ* to be three distinct cases of conduct, each determined by the relative preponderance of conflicting motives. He assimilates the three *φοραὶ* to (1) ἐγκράτεια, (2) ἀκράτεια, (3) σωφροσύνη. In (1) λόγος prevails, in (2) it is beaten, in both cases after a struggle, while (3) exemplifies the sway attended by no struggle which reason, λόγος, naturally and rightfully exerts over the passions. This is plausible, but it requires, unless the text be altered, that ἐγκράτεια should be read into the words *νικᾷ δ' ἐνίοτε καὶ κινεῖ τὴν βούλησιν*, which, as we have seen, M. Rodier has accordingly done. See *note supra* ad loc.

a 16. *τὸ δ' ἐπιστημονικὸν... μένει.* Cf. 407 a 32 sq. The variant *κινεῖ* for *κινεῖται*, found in codd. T W X, is attested by Simplicius 311, 7 *τὸ δὲ ἐπιστημονικὸν οὐ κινεῖ ἥτοι οὐ κινεῖται* (διπλῇ γὰρ ἡ γραφὴ φέρεται). It was possibly due to 432 b 26—29. A. now returns from τὸ λογιστικὸν or βουλευτικόν, as employed by the practical intellect, to τὸ ἐπιστημονικόν, which is purely theoretical and determines the end which the practical intellect seeks the means to attain, as explained above 433 a 14—17. The operation of τὸ ἐπιστημονικὸν is concerned with a general notion, ὁρισμός, or a universal proposition, either invariably true, αἰεῖ, or generally true, ὡς ἐπὶ τὸ πολὺ: *Metaph.* 1039 b 32, 1003 a 15.

a 16. *ἐπεὶ δ' ἡ μὲν καθόλου ὑπόληψις καὶ λόγος, i.e. ἐπεὶ ὑπόληψις ἐστὶν ἡ μὲν*

καθόλου ὑπόληψις ἢ δὲ τοῦ καθ' ἕκαστα ὑπόληψις. This grammatical device of subdividing the whole into two or more parts can be illustrated, e.g. 433 b 14 τὸ δὲ κινεῖν διττόν. This sentence introduces the practical syllogism, as it is called, i.e. the reasoning process which precedes action. Like other syllogisms, it starts with a general proposition or major premiss. Here ὑπόληψις denotes a premiss viewed as a judgment or unspoken proposition and differs hardly at all from δόξα, which is similarly used in *Eth. Nic.* 1147 a 25 ἢ μὲν γὰρ καθόλου δόξα. See *note* on ὑπόληψις 427 b 16. The words καὶ λόγος are added to make this meaning more definite, not necessarily implying the spoken proposition, cf. a 17 *ἡγήσατο* ἢ μὲν γὰρ λέγει κτέ. The minor premiss is obtained from αἰσθησις *Eth. Nic.* l.c. ἢ δ' ἑτέρα [int. πρότασις] περὶ τῶν καθ' ἕκαστά ἐστιν, ὧν αἰσθησις ἤδη κυρία. However, in the syllogism it must, like the major, appear as ὑπόληψις καὶ λόγος.

a 17. ἢ μὲν, int. ἢ καθόλου.

a 18. ἢ δὲ, int. ἢ τοῦ καθ' ἕκαστα. ὅτι τότε τοίνυν τοιόνδε, int. ἐστί. The *ἔτι* is practically equivalent to inverted commas, the premiss being given in oratio recta. Perceiving this, Torstrik restored τοίνυν from Simplicius. Note that this formula for the practical syllogism is of the most general kind, much wider than the examples given in *Eth. Nic.* 1147 a 5 sqq. *ὅτι παντὶ ἀνθρώπῳ συμφέρει τὰ ξηρά, καὶ ὅτι αὐτὸς ἄνθρωπος, ἢ ὅτι ξηρὸν τὸ τοιόνδε.* Or again, "all sweet things are pleasant, and this thing is sweet"; or that in *De Motu An.* 7, 701 a 13 *παντὶ βαδιστόν ἀνθρώπῳ, αὐτὸς δ' ἄνθρωπος.*

a 19. ἤδη αὕτη κινεῖ ἡ δόξα, οὐχ ἡ καθόλου. It is the latter, viz. the particular judgment, and not the universal, which moves to action. Cf. *Eth. Nic.* 1147 b 9 *ἐπεὶ δ' ἡ τελευταία πρότασις δόξα τε αἰσθητοῦ καὶ κυρία τῶν πράξεων*, 1143 a 32 *ἔστι δὲ τῶν καθ' ἕκαστα καὶ τῶν ἐσχάτων ἅπαντα τὰ πρακτά, Μεταφρ.* 981 a 16 *αἱ δὲ πράξεις καὶ αἱ γενέσεις πᾶσαι περὶ τὸ καθ' ἕκαστόν εἰσιν· οὐ γὰρ ἄνθρωπον ὑγιάζει ὁ ἰατρεύων, πλὴν ἀλλ' ἢ κατὰ συμβεβηκός, ἀλλὰ Καλλίαν ἢ Σωκράτην, Anal. Prior.* II. 21, 67 a 9 sqq.

a 20 ἢ ἀμφω...21 ἢ δ' οὐ. This provisional decision in favour of the minor premiss is corrected by A. Both judgments are springs of action, but there is this difference between them, that the universal, ἢ μὲν [int. καθόλου], is fixed, the other ἢ δ' [int. τοῦ καθ' ἕκαστα] is not, but varies with the circumstances. So *Simpl.* 314, 38 *ἀλλ' ἢ μὲν ἡρεμούσα μᾶλλον, ὅτι οὐ κινουμένη αὕτη κινεῖ. μένει γὰρ ἡ αὕτη αἰεὶ οὐδέποτε μεταβαλλομένη οὐδὲ ἄλλοτε ἄλλως ἔχουσα· ἐπιστημονικὴ γὰρ ἦν.* The general maxims *βαδιστόν ἀνθρώπῳ, παντὶ ἀνθρώπῳ συμφέρει τὰ ξηρά* hold universally, or for the most part, *ὡς ἐπὶ τὸ πολὺ*, the particular cases to which they apply are constantly changing. Thus the universal proposition does not prompt to any particular act, does not inform me what I am to do under given circumstances. It is comparatively quiescent and ineffective. Themistius, however, took the words differently. He understood them as expressing negatively the fact that all action takes its rise with particulars. A desire is associated only indirectly with the end to which the universal points. It is directly excited by the apprehension of the particular means by which deliberation has shown this end can be realised: *Them.* 122, 18 H., 224, 11 Sp. ἢ δὲ (the minor) *τῇ κινήσει συνάπτουσα* [int. κινεῖ]. To this Torstrik objects (p. 219): A. enim hoc dicit: propositio minor maiore facilius μεταπίπτει: in singulis enim rebus spectatur motio et alteratio et interitus. But I doubt if μᾶλλον justifies "facilius" or Trend.'s "ut alterum magis quiescat." It may be added by Greek idiom to contrast the major, ἡρεμούσα, with the minor, κινουμένη κινούσα. Cf. *St Luke* xviii. 14 (A.V.) "This man went down to his house justified rather than the other."

## CHAPTER XII.

It remains to consider the part taken by the several faculties of soul in the maintenance of life; in other words, why living things are found to possess one or more of these faculties, and what is the end which each such faculty subserves. A. now proceeds to redeem his promises made, e.g. 413 b 9 sq., 414 a 1, b 33. To enquire the reason why the facts are as they are brings us to a final cause, τὸ οὐ ἕνεκα. Having assimilated the order and regularity of the natural world to human action directed towards an end (415 b 16 ὥσπερ γὰρ ὁ νοῦς ἕνεκά του ποιεῖ, τὸν αὐτὸν τρόπον καὶ ἡ φύσις), A. sees evidence of adaptation and design in the structure of animals and plants, e.g. 412 b 1—4, 432 b 17—19, 25. Every vital activity is also an activity guided by a purpose: 420 b 16—27, 432 b 15. Other passages may be adduced: 407 b 25 sq., 411 b 23, 412 a 28—b 4, 415 b 15—20, 416 b 23—25, 420 a 9—11, 424 b 22—425 a 13, 432 b 17—26. The whole treatise is pervaded with the spirit of the teleology which A. inherited from Plato's *Timaeus*. The method of enquiry in this chapter is that pursued in the *De Part. An.*, where its nature is explained in the opening chapter, especially 642 a 1—17, a 31—b 4. The oft-recurring phrases ἀναγκαῖόν ἐστιν, ἐξ ἀνάγκης are there explained to mean ἀναγκαῖον ἐξ ὑποθέσεως, ὧν οὐκ ἄνεν, necessary conditionally or for a given purpose. The end determines the conditions. The performance of a function is impossible without adequate instruments. If the axe you are making is to cut, it must be hard: thus its material, bronze or steel, is determined. So also with the body: if it is to subserve certain functions of the soul, it must be τοιονδὶ καὶ ἐκ τοιωνδὶ. Not only its parts, the several limbs, but the tissues of which they are made are determined by their functions. See *notes* on 407 b 25 δεῖ γὰρ and 416 a 13. Similarly in the present chapter, if anything which has life is to exist at all, it must be nourished. If it is to be preserved when in contact with other things, it must have the sense of touch and, either for further protection when it is capable of locomotion or in order to develop a higher existence, it must have the other senses also, sight, hearing and smell. Obviously all this implies the conception of organic existence as a continuous and orderly development, a progression from lower to higher, in which each successive step includes all that went before; in short, precisely that conception which is unfolded in A.'s other zoological and biological works.

**434 a 22—b 8.** The nutritive faculty is indispensable to all living things, to plants as well as to animals, from birth to death. All alike must grow, attain to maturity and decay; and these processes necessarily imply nutrition, and therefore a nutritive capacity, in other words, a nutritive soul [§ 1]. The sensitive faculty is not universally necessary. Where the body consists of only one element or where the living thing is incapable of receiving the forms of objects apart from the matter, viz. in plants, there touch and *a fortiori* all other senses must necessarily be absent [§ 2]. To the animal, however, sensation is indispensable, if we once admit design in nature. Without sensation an animal capable of progressive movement would inevitably perish and thus fail to attain that perfection which it is the end of its nature to realise. Without sensation all except stationary animals would fail to procure food [§ 3]. If it be argued that an animated being possessed of soul and discriminating reason, capable of progressive movement and produced by generation, may exist and yet be destitute of sensation, why, we ask, should

this be so? The absence of sensation will not be better either for the soul or for the body of such an animal. The soul will not any the more be able to think [without images derived from sense] and the body will not any the more be able to exist. No non-stationary body, then, will be endowed with soul, without having sensation [§ 4].

434 a 22 τὴν μὲν οὖν θρεπτικὴν...23 ἀν ζῆ. We now return somewhat abruptly to the proposition enunciated 413 a 20 sqq., that there are various manifestations of life in living things and that the faculties of the soul or vital principle must be arranged in a corresponding scale, ascending from nutrition and growth through sense to intelligence. That the nutritive soul must be present wherever any of the higher faculties are found has been laid down 413 a 31 sq., the proof being that in plants the nutritive soul exists independently of the other faculties. So also 415 a 1—3, 415 a 23 sq. There is the same distinction between *ὅτι περ ἀν ζῆ* and *ζῶον* as there is between *ζῆν* and *ζῶον εἶναι* 413 b 1 sq., namely, that the former includes, and the latter excludes, plants.

a 23. καὶ ψυχὴν ἔχει...φθορὰς. As it is necessary, so it is a fact that every living thing possesses soul from birth to death. Torstrik urges that this is a point made against the Orphic doctrine (410 b 28—30), according to which the soul enters from the surrounding air in the act of respiration. Plants do not breathe, and yet are animate. If, with Christ, we change *ἔχει* into *ἔχειν*, there seems distinctly less reason for a repetition of *ψυχὴν*, which he accordingly omits. Them., who appears to have also read *ἔχειν*, gives (122, 22 H., 224, 15 Sp.) καὶ συμπαράτεινεν αὐτῷ τὴν δύναμιν ταύτην ἀπὸ γενέσεως ἄχρι φθορὰς.

a 24 ἀναγκὴ γὰρ...25 ἀδύνατον, as already stated 415 b 26—28. This has been explained in 416 b 11 sqq., the conclusion being, 416 b 17—23: "Hence the above described principle of the soul is the power to preserve in existence that which possesses it, in so far as it is a definite individual, while nutrition prepares it for activity. Therefore it cannot live when deprived of nutriment. There are, then, these three things, that which is nourished, that with which it is nourished and that which nourishes it. The last of the three is the primary soul, that which is nourished is the body which contains the soul, that where-with it is nourished is nutriment." As we were told 413 a 25 sqq., plants are thought to live: they contain within themselves such a power and principle as enables them to grow and decay in opposite directions, and they continue to live so long as they can assimilate nutriment. Cf. also 414 b 7 sq., where in *τὰ ζῶντα πάντα* A. includes plants, as well as animals.

a 26. πᾶσι τοῖς φυομένοις. The participle seems expressly chosen because A. is thinking specially of plants: *τὰ φυόμενα*=*τὰ φυτά*, as in 413 a 25 just cited. Cf. the Ciceronian expressions *De Finibus* v. § 33 ea quae terra gignit, *De Nat. Deor.* II. § 33 ea quae gignuntur e terra.

a 27. αἰσθῆσιν δ' οὐκ...τοῖς ζῶσιν. With *τοῖς ζῶσιν* cf. a 22 *supra* *ὅτι περ ἀν ζῆ*, 414 b 8. The introduction of sense breaks up *τὰ ζῶντα* into *φυτά* καὶ *ζῶα*. Cf. 413 b 1 sq., also 424 a 32 sqq. *οὔτε γὰρ...28 ἀφῆν ἔχαν*. Touch being the most rudimentary sense, if touch is absent, no higher sense can be present. Cf. 414 b 3, 415 a 3 sq. But where the body consists of a single element, i.e. is *ἁπλοῦν*, not *μεικτόν*, there cannot be even the sense of touch, 423 a 11 sqq., 425 a 6 sqq. Plants, however, are composed chiefly, if not entirely, of earth: *De Resp.* 13, 477 a 27 *τὰ μὲν γὰρ ἐκ γῆς πλείονος συνέστηκεν, οἷον τὸ τῶν φυτῶν γένος*, *De Gen. An.* III. 11, 761 b 13 *τὰ μὲν γὰρ φυτὰ θείη τις ἀν γῆς*. Themistius is careful to qualify A.'s expression: (122, 29 H., 224, 26 Sp.) *ὅσα τοῖνυν τῶν ζῶντων ἢ ἐξ ἁπλοῦ παντάπασι σώματος ἢ ἐγγὺς ἁπλοῦ*. In the reasons assigned by Themistius why plants cannot have touch (122, 33 H., 225, 2 Sp.), *ὅτι τὸ σῶμα*

αὐτῶν ἐγγύς ἀπλοῦ καὶ οὐχ οἶον τε δέχεσθαι τὸ εἶδος ἄνευ τῆς ὕλης, τῆς τοιαύτης μεσότητος ἅτε ἐστερημένον καὶ πλείονος μετέχον τῆς γῆς, he correctly follows the lines laid down in 424 b 1—3. See *notes* ad loc.

a 28 [οὔτε ἄνευ...29 εἶναι ζῶον]. Them. and Philop. pass over these words. Simpl. read them, as is plain from his comment 318, 21 τὸ οὖν οὔτε συντακτέον πάλιν λαβόντας τὸ προειρημένον τὸ “ἄνευ ταύτης (τούτεστι τῆς ἀφῆς) οἶον τε οὐθὲν εἶναι ζῶον,” καὶ τῷ ῥήτῳ τούτῳ συντάξαντες καὶ τὸ ὕστατον ἐπενεχθὲν οὔτε, οὕτω τὸ λοιπὸν τῆς λέξεως ἐποίσομεν ὅσα μὴ δεκτικά τῶν εἰδῶν ἄνευ τῆς ὕλης, ἵνα διπτὴ ἀποδοθῇ ἡ αἰτία τοῦ πάντως τὰ θνητὰ ζῶα τὴν ἀπτικήν ἔχειν αἰσθῆσιν, μίαν μὲν τὴν ὅτι οὐκ ἄνευ ταύτης αἱ λοιπαί, ἑτέραν δὲ τὴν ἐπειδὴ ὁλως ζῶα ὄντα καὶ ἐπικτήτως τῶν γνωστικῶν εἰδῶν ὄντα δεκτικά (τοῦτο γὰρ τὸ μὴ ἄνευ ὕλης αἰσθητικὰ εἶναι), ἀνάγκη καὶ αἰσθητικὰ παθητικῶς. The clause may serve as a parenthetical reminder of what has been said before 414 a 2 sq., even if it is virtually repeated 434 a 30. See further 435 a 11 sqq.

a 29 οὔτε ὅσα...30 τῆς ὕλης. See 424 b 1 quoted above.

a 30. τὸ δὲ ζῶον ἀναγκαῖον αἰσθῆσιν ἔχειν. The proof amounts to this; animals which move from place to place must have sensation in order to find their food, or they would inevitably perish, and then nature's design in producing them, viz. that they should come to maturity and continue their species, would be frustrated. This proof, A. admits, does not apply to zoophytes which draw their nourishment from the spot on which they grow.

a 31. εἰ μὴθὲν μάτην ποιεῖ ἡ φύσις. This, the general assumption underlying the whole teleological argument, has appeared already, *εἰς τὴν αἰτίαν* *verbis*, in 432 b 21, where see *note*. Cf. 415 b 16 sq.: Nature, like human intelligence, works to an end (*ἕνεκά του ποιεῖ*).

a 31 ἕνεκά του...32 ἢ συμπτώματα...ἕνεκά του, “all things in nature are either designed with a view to an end, or will be found to be coincidences of what is so.” A. accepts the law of universal causation and in the domain of nature assumes design, wherever causality can be established. But this leaves a margin of effects strictly due to a causation which cannot be said to be designed, events which he denotes by *συμπεσεῖν* and *σύμπτωμα*. Efficient causes have always a definite object in view, but they frequently fail of its accomplishment, owing to the indiscriminate nature of the matter which they use, while at other times, owing to the same disturbing cause, they incidentally produce results which they did not originally design. Hence there arise *συμπτώματα* or *παρὰ φύσιν συμπίπτοντα*, of which A. says *De Gen. An.* IV. 10, 778 a 4 βούλεται μὲν οὖν ἡ φύσις τοῖς τούτων [int. τῶν ἄστρον] ἀριθμοῖς ἀριθμεῖν τὰς γενέσεις καὶ τὰς τελευτάς, οὐκ ἀκριβοῖ δὲ διὰ τε τὴν τῆς ὕλης ἀοριστίαν καὶ διὰ τὸ γίνεσθαι πολλὰς ἀρχάς, αἱ τὰς γενέσεις τὰς κατὰ φύσιν καὶ τὰς φθορὰς ἐμποδίζουσιν πολλάκις αἰτίαι τῶν παρὰ φύσιν συμπιπτόντων εἰσίν. Such events in nature are parallel to the effects of chance, *τύχη*, in human agency. Cf. *Phys.* II. 5, 196 b 17 τῶν δὲ γινομένων τὰ μὲν ἕνεκά του γίνονται, τὰ δ' οὐ· τούτων δὲ τὰ μὲν κατὰ προαίρεσιν, τὰ δ' οὐ κατὰ προαίρεσιν, ἄμφω δ' ἐν τοῖς ἕνεκά του, ὥστε δηλονότι καὶ ἐν τοῖς παρὰ τὸ ἀναγκαῖον καὶ τὸ ὥς ἐπὶ πολλὰ ἔστιν ἔνια περὶ ἃ ἐνδέχεται ὑπάρχειν τὸ ἕνεκά του. ἔστι δ' ἕνεκά του ὅσα τε ἀπὸ διανοίας ἂν πραχθεῖν καὶ ὅσα ἀπὸ φύσεως. τὰ δὲ τοιαῦτα ὅταν κατὰ συμβεβηκὸς γένηται, ἀπὸ τύχης φασὲν εἶναι. Ταυτόματον is a wider conception than *τύχη*, as the latter is restricted to undesigned results following upon purposed action (*προαιρετόν*). Cf. *Phys.* II. 6, 197 b 1 sqq. Hence *Metaφ.* 1032 a 12 τῶν δὲ γινομένων τὰ μὲν φύσει γίνονται, τὰ δὲ τέχνη, τὰ δ' ἀπὸ ταυτομάτου, *id.* a 28 τούτων δ' [int. τῶν ποιήσεων] τινες γίνονται καὶ ἀπὸ ταυτομάτου καὶ ἀπὸ τύχης παραπλησίως ὥσπερ ἐν τοῖς ἀπὸ φύσεως γινομένοις. Thus a “contingent” or “accidental” event is caused by the diversion of free or

compulsory purposive action to results alien from its purpose through the influence of external circumstances. (Akin to this, but unimportant for our present investigation, is the coincidence in time of two circumstances between which no causal relation exists, e.g. a walk and an eclipse of the moon. Such a coincidence A. calls *σύμπτωμα*, *De Div. per Somn.* I, 462 b 26 sqq.) Now since these disturbing causes are always found in the character of the material means by which ends are realised, and in the system of nature to which these means belong, contingency, in A.'s sense of the word, may be defined as the disturbance by intermediate causes of an activity directed to a purpose.

When this relation of *σύμπτωμα* to *συμβεβηκός* is understood A.'s usage of the term is easy to follow. It is opposed as here to *ἐνεκά του* in *De Resp.* 5, 472 b 26 *ἀλλ' ὡς περὶ συμπτώματος τινος ἀποφαίνονται μόνον. καίτοι γε κύρια ταῦθ' ὁρῶμεν τοῦ ζῆν καὶ τελευτᾶν*: cf. *Metaph.* 1093 b 16 *διὸ καὶ ἔοικε συμπτώμασιν*, *Calleg.* 8, 9 b 15 *ἐκ τινων φυσικῶν συμπτωμάτων*, *De Gen. An.* IV. 10, 777 b 8 *δι' ἄλλα συμπτώματα φυσικά*. So also *Phys.* II. 8, 198 b 27 *ἐπεὶ οὐ τοῦτου ἐνεκα γενέσθαι, ἀλλὰ συμπεσεῖν*. Further, like all that is contingent, coincidences are opposed to what is regular and usual, *ὡς ἐπὶ τὸ πολὺ*, much more to what is invariable and necessary, *De Div. per Somn.* I, 463 b 10 *τὸ γὰρ σύμπτωμα οὐτ' αἰετ' οὐθ' ὡς ἐπὶ τὸ πολὺ γίνεται*, Theophr. *Metaph.* (p. 320, ed. Br., *frag.* XII. § 28 W) *ἀλλὰ τὰ μὲν συμπτωματικῶς τὰ δ' ἀνάγκη τινί*. See Zeller, *Aristotle*, E.T., I., pp. 358—372.

a 32 *εἰ οὖν πᾶν... b 8 αἰσθήσεως*. The apodosis begins at b 7 *οὐθὲν ἄρα*. The desire of an early apodosis led Trend. to conjecture *ἔχοι* for *ἔχον* a 33, and Torst. *εἴη* or *γένοιτο* for *πᾶν*. The apodosis at b 7, introduced by *ἄρα*, follows from two premisses (1) a 32—b 1 *εἰ οὖν... ἔργον*, (2) b 3—5 *οὐχ οἷόν τε... ἀγένητον*. The other clauses 434 b 1—2 *πῶς γὰρ θρέψεται... πεφύκασιν* and b 5—7 *διὰ τί... ἐκείνο* are interjected parentheses. As so frequently happens when the protasis is introduced by *ἐπεὶ*, A. has almost forgotten the structure of the sentence by the time he reaches the apodosis. Thus there is no *μὲν* in a 32 to balance *οὐχ οἷόν τε* δὲ of b 3 and, though *οὐχ οἷόν τε* = *ἀδύνατον*, A. would probably have written *μὴ* if he had been conscious of a preceding *εἰ*.

a 33. *πᾶν σῶμα πορευτικόν*. This restriction and those subsequently introduced b 4 *μὴ μόνιμον ὄν, γενητὸν δὲ* are thus emphasised by Them. 123, 2 H., 225, 10 Sp. *ἀλλ' ἔστω ἡ αἰσθησις ἀναγκαία τοῖς οὐ μόνον ζῶσιν ἀλλ' ἤδη καὶ ζώοις, καὶ οὐχ ἀπλῶς ἀλλὰ ζώοις πορευτικοῖς, καὶ οὐδὲ τοῦτο ἀποχρῶν, ἀλλὰ καὶ γενητοῖς καὶ φθαρτοῖς*. The ambiguous term *σῶμα*, as in b 3 *ἡντὶς*, means "animate body" or what biologists now call "organism."

434 b 1. *εἰς τέλος οὐκ ἂν ἔλθοι*. Cf. *De Gen. An.* IV. 6, 775 a 20 *πάντα γὰρ τὰ ἐλάττω πρὸς τὸ τέλος ἔρχεται θάπτον*, i.e. sooner come to maturity, reach perfection. So *ἔχειν τέλος Metaph.* 1021 b 24 *κατὰ τὸ ἔχειν τέλος τέλεια* [int. *λέγεται*]. In our passage it is the task of nature that animals should attain maturity, i.e. become *τέλεια*, and nature's intention would be frustrated if they did not fulfil her design in their production. Cf. Them. 123, 10 H., 225, 21 Sp. *ὥστε μάτην ἂν ἡ φύσις τοσαῦτα ζῶα παρήγαγε μὴ μέλλουσα αὐτὰ προᾶξιν εἰς τὸ οἰκείον τέλος*. Them., however, understands by this intention the continuance of the species: 123, 12 H., 225, 23 Sp. *τέλος δὲ οἰκείου ἐκάστῳ τῶν γενητῶν ζώων τὸ γενῆσαι οἷον αὐτό*. Simpl. more plausibly understands by it the preservation of the individual: 319, 23 *τὸ τῆς σωτηρίας, ὡς εἴρηται, αἴτιον*. Cf. 432 b 24 *σημεῖον δ' ὅτι ἔστι γεννητικὰ καὶ ἀκμὴν ἔχει καὶ φθίσω*, which comprehends both.

b 1. *ὅ ἐστι φύσεως ἔργον*. It is nature's task or function that the animal should do so, should come to maturity and perfection. This, however, must not be taken as if nature were a power outside the individual. It is, as we saw 412 b 16 sq., an inherent, indwelling cause and principle in the animal. See

notes on 406 a 14, 415 b 18. It is, then, the animal's own nature which works to an end and realises itself when the animal comes to maturity or fulfils its purpose. Cf. also *De Gen. An.* II. 1, 731 b 32 ἡ φύσις τοῦ τοιοῦτου γένους cited p. 341 in note on 415 b 6: also *De Gen. et Corr.* II. 6, 333 b 16 τῶν δὲ φύσει ὄντων αἴτιον τὸ οὕτως ἔχειν, καὶ ἡ ἐκάστου φύσις αὕτη. πῶς γὰρ θρέψεται; Int. τὸ πορευτικὸν ζῶν μὴ ἔχον αἰσθῆσιν. It will not find nourishment on the spot, like plants and stationary animals: *Them.* 123, 5 H., 225, 13 Sp. οὐ γὰρ ἔγγυθεν ἔχει τὴν τροφήν ἐπιρρέουσιν, οὐδὲ ἐκ τῶν στοιχείων, ἐν οἷς ἐσπάρη καὶ ἐφυτεύθη, ἀλλὰ δεῖ πορίζεσθαι αὐτὰ καὶ μετιέναι.

b 2. τοῖς μὲν γὰρ μόνιμοις, not only plants (*De Part. An.* II. 10, 656 a 1), but stationary animals (*ib.* IV. 5, 681 b 34), as ὑσπρακώδερμα, zoophytes, e.g. sponges and sea-anemones. Cf. 410 b 19, where see note.

b 2. ὑπάρχει τὸ ὅθεν πεφύκασιν. Supply εἰς τροφήν understood from πῶς γὰρ θρέψεται; *De Gen. An.* III. 11, 762 b 12 τροφή δ' ἐστὶ τοῖς μὲν ὕδωρ καὶ γῆ, τοῖς δὲ τὰ ἐκ τούτων, ὡσθ' ὕπερ ἢ ἐν τοῖς ζῴοις θερμότης ἐκ τῆς τροφῆς ἀπεργάζεται, τοῦθ' ἢ τῆς ὥρας ἐν τῷ περιέχοντι θερμότης ἐκ θαλάττης καὶ γῆς συγκρίνει πέττουσα καὶ συνίστησιν. It appears, then, that ὅθεν πεφύκασιν must be γῆ καὶ ὕδωρ, the stationary animals being confined to the water, *Hist. An.* I. 1, 487 b 7 ἔστι δὲ τὰ μόνιμα ἐν τῷ ὑγρῷ, τῶν δὲ χερσαίων οὐδὲν μόνιμον. The same principle applies to higher forms of life; in vermiparous, oviparous and viviparous animals the surplus material (τὸ λειπόμενον) beyond that which is drawn upon in the process of generation is reserved for the sustenance of the immature offspring, while it is unable to provide for itself. Cf. *De Gen. An.* II. 1, 732 a 25 sqq., III. 11, 763 a 9 sqq., III. 2, 752 b 19 sqq., *Pol.* 1256 b 10 sqq., 1258 a 23 καὶ τροφήν τὴν φύσιν δεῖ παραδοῦναι γῆν ἢ θάλατταν ἢ ἄλλο τι, *ib.* a 35 φύσεως γὰρ ἐστὶν ἔργον τροφήν τῷ γεννηθέντι παρέχειν· παντὶ γὰρ ἐξ οὗ γίνεται, τροφή τὸ λειπόμενόν ἐστιν.

b 3 οὐχ οἷόν τε δὲ σῶμα...4 γενητὸν δέ. The subject of this clause, σῶμα μὴ μόνιμον ὄν, γενητὸν δέ, is practically equivalent to πᾶν σῶμα πορευτικόν of a 33. In both σῶμα must be taken as σῶμα φυσικόν in the limited sense, μετέχον ζωῆς, and, as A. did not recognise climbing plants, in the still more limited sense of animal. The clause asserts that such a ζῶν cannot be a ζῶν ἔμφυχον by the possession of the higher intellectual faculty (νοῦς κριτικός) without possessing the lower faculty of sense. This case would seem to be covered by the general rule laid down 415 a 8 sq., where the insertion of τῶν φθαρτῶν is significant. Torstrik however appeals to 432 a 7 καὶ διὰ τοῦτο οὔτε μὴ αἰσθανόμενος μηθὲν οὐθὲν ἂν μάθοι οὐδὲ ξυνίει and *De Sensu* 6, 445 b 15 τίνοι κρινοῦμεν ταῦτα ἢ γνωσόμεθα; ἢ τῷ νῷ. ἀλλ' οὐ νοητά, οὐδὲ νοεῖ ὁ νοῦς τὰ ἐκτὸς μὴ μετ' αἰσθήσεως ὄντα. Both passages relate exclusively to the human mind. Whatever view be taken of the genuineness of the succeeding clause, there can be no doubt that the carefully-worded description of our lemma is intended to exclude, not only plants, but also τὰ οὐράνια, τὰ αἰδία τῶν αἰσθητῶν, i.e. the stars, which are κινητά, but at the same time are αἰδία or ἀγένητα.

b 4. [ἀλλὰ μὴν οὐδὲ ἀγένητον]. This clause was read by Alex. Aphr. and in some of the copies known to Simpl., whose words are: (320, 28) ἐν τισι δὲ ἀντιγράφοις πρὸςκειται τὸ ἀλλὰ μὴν οὐδὲ ἀγένητον, ὅπερ ὁ μὲν Πλούταρχος ἐξηγεῖται, ὡς νῦν τοῦ Ἀριστοτέλους καὶ τοῖς οὐρανίοις ἀποδιδόντος αἰσθῆσιν· οὐδὲ γὰρ τὰ ἀγένητα, διότι μὴ καθ' ἑαυτὰ τόπον ἐκ τόπου ἀμείβοντα καὶ διὰ τοῦτο μόνιμα ὄντα, ἀμοιρεῖν αἰσθήσεως. φαίνεται δὲ ὁ Ἀριστοτέλης μηδαμῶς τὴν αἰσθῆσιν ἐπὶ τῶν οὐρανίων προσιέμενος, ἀλλὰ καὶ ἐφεξῆς αὐτὸ τοῦτο ἀναινόμενος. διὸ κάλλιον, οἶμαι, ὁ Ἀλέξανδρος ἐξηγεῖται τὸ ἀλλὰ μὴν οὐδὲ ἀγένητον, ἀξίων ἀκούειν πρὸς τὸ αἰσθῆσιν ἔχειν, ἵνα μὴ πρὸς τὸ προσεχῶς ἐληγμένον ἢ ἐπαγόμενον, πρὸς τὸ οὐχ οἷόν τε σῶμα ἔχειν μὲν ψυχὴν, αἰσθῆσιν δὲ μὴ ἔχειν, ἀλλὰ πρὸς τὸ ἐξ ἀρχῆς τὸ "αἰσθῆσιν δὲ οὐκ

ἀναγκαῖον ἐν ἅπασιν τοῖς ζῶσιν. οὔτε γὰρ ὅσων τὸ σῶμα ἀπλοῦν, ἐνδέχεται ἀφήν ἔχειν" ἀλλὰ μὴν οὐδὲ ἀγένητον ἀναγκαῖον αἰσθῆσιν ἔχειν. Thus Alex. Aphr. connects the words with ἀφήν ἔχειν (434 a 28), supplying ἀναγκαῖον αἰσθῆσιν ἔχειν. Even then the interjected parenthesis separates two closely connected clauses beginning with οὔτε, and the introduction of τὸ ἀγένητον is extremely abrupt. Plutarch on the other hand defended the clause, at the same time (1) maintaining that the heavenly bodies do possess sensation and (2) reading διὰ τί οὐχ ἔξει (b 5), whereas Alex. Aphr. read there διὰ τί ἔξει. See Philop. 595, 36—596, 32. If the clause be cancelled (see critical *notes*) or transposed (in accordance with Alex. Aphr.'s suggestion), it will be necessary to understand διὰ τί...ἐκεῖνο of the same subject as before, viz. σῶμα μὴ μόνιμον ὄν, γενητὸν δέ. Simpl. and Torst. have so explained them, although there is a little awkwardness in saying that the possession of soul and discriminating intelligence without sensation is better for the soul. Even if the clause be retained, it might still be treated as a parenthesis, and διὰ τί...ἐκεῖνο be understood in the same way of ζῶν πορευτικόν. But there would be a natural tendency to make τὸ ἀγένητον the subject, as Them. does, 123, 24—32 H., 226, 12—24 Sp., and as Philop. informs us both Alex. and Plut. also did: see Philop. 595, 39—596, 12 for Alex. Aphr. and 596, 14—32 for Plutarch.

b 5. διὰ τί γὰρ ἔξει; The meaning to be given to this rhetorical question and also the sequel as far as δι' ἐκεῖνο (b 7) all depend upon the view taken of the preceding clause. Alex. Aphr., followed in the main by Them. and Philop., retaining the impugned clause, interprets A. as arguing that sensation is not required by τὰ οὐράνια, for its possession will not improve their rational souls or their bodies. Cf. Philop. 595, 39—596, 12. The weak point here is that, as Simpl. expressly testifies, Alex. Aphr., having supplied ἀναγκαῖον αἰσθῆσιν ἔχειν after ἀγένητον, goes on to supply τὰ οὐράνια αἰσθῆσιν with the question. So that, if the correctness of the first supplement be successfully challenged, the latter is not likely to be maintained.

Plutarch opposed Alex. on the issue of fact, whether in A.'s system τὰ οὐράνια (perhaps we should say more precisely, the spirits which move the spheres, assumed as necessary for the explanation of the movements of the stars and planets) have or have not the faculty of sense. Alex. Aphr. denied it, Plutarch affirmed it, and in justice to him it should be remarked that, apart from the present passage, there is nothing in A.'s writings which contradicts his view. Plutarch accordingly read διὰ τί γὰρ οὐχ ἔξει [int. αἰσθῆσιν τὰ οὐράνια]; Whether he inserted οὐχ on his own conjecture we are not informed. The reading, however it originated, appears in five of our MSS., and unfortunately we have not cod. E. Thus, reading οὐχ ἔξει, Plutarch can interpret the arguments which follow the question as urged in support of the view that it is better both for the souls and bodies of the stars that they should have sensation. Sensitivity is better than its absence and the perceptions of the heavenly bodies are not, like ours, dependent upon τὸ πάσχειν, so as to infringe upon their impassivity and immortality. Nor will it be a hindrance to their thought, for the particulars of sense lead up to the universal, and sense in them need not disturb reason as in us (Philop. 596, 12—32).

Simplicius confines the argument to the non-stationary generated body of the animal; we must then supply διὰ τί γὰρ ἔξει ψυχὴν μὲν καὶ νοῦν κριτικόν, αἰσθῆσιν δὲ οὐχ ἔξει; And so I have translated. Why should the non-stationary, generated body have soul and discriminating reason without having sense? (As the δὲ clause is the more important, the reading οὐχ ἔξει would naturally arise and we need not suppose Plutarch to have arbitrarily altered the text.)



Suppose, then, a case of this kind: a non-stationary body, i.e. not a plant, but generated, i.e. not one of the οὐράνια. If any one maintains that it is possible for such a body to have reason without having sensation, he must maintain that the absence of sensation is better either for the soul or for the body of the animal, which is a compound of the two: Simpl. 320, 11 καὶ γὰρ ἡ λογικὴ ψυχὴ οὐκ ἄλλως πρὸς τὸ νοεῖν ἢ ὅλη πρὸς σῶμα ρέυσασα ἐγείρεται, εἰ μὴ δι' αἰσθήσεως τὴν πρώτην, καὶ ἐν ταῖς πράξεσι συνεργῶ αὐτῇ [int. αἰσθήσει] καὶ τῇ ἀπ' αὐτῆς χρῆται φαντασίᾳ, καὶ τὸ σῶμα οὐ διὰ τοῦ νοῦ μόνον, ἀλλὰ καὶ δι' αἰσθήσεως σώζεται τῆς τοδὶ μὲν βλαβερὸν αὐτῷ δεικνυούσης, τοδὶ δὲ σωτήριον.

This argument Torstrik puts tersely and cogently: quem ad finem corpus quod nec plantae est nec sideris (de his enim non agitur), quum careat sensu, animam habeat et intelligentiam ad res oblatas discernendas? Ponamus enim quod negamus, carere sensu, praeditum esse intelligentiā, aut profecto ea animam iuvabit aut corpus (ἢ τῇ ψυχῇ βέλτιον ἢ τῷ σώματι). At neutrum verum est (νῦν δ' οὐδέτερον). Si animam dicis iuvari intelligentiā, falleris: nihilo enim magis intelliget (ἢ μὲν γὰρ οὐ μᾶλλον νοήσει), sive habet sive non habet intellectum: sensum enim non habet, at nihil est in intellectu quod non fuerit in sensu: ...Sin corpus putas intellectui iuvari, iterum falleris: corpus enim nihilo magis vitam suam (cf. b 14 et 26 εἰ μέλλει σώζεσθαι τὸ ζῶον et 17 ἀδύνατον ἔσται σώζεσθαι τὸ ζῶον) servabit (τὸ δ' οὐθὲν ἔσται μᾶλλον), propterea quod in intellectu practico minor propositio semper singulas res sibi subicit (434 a 16—21): at harum cognitione privata erit, siquidem sensu caret. (Cf. *De Sensu et Sens.* 1, 436 b 18—437 a 3.)

b 5. βέλτιον. What is the subject? Torstrik apparently thought νοῦς κριτικὸς (intelligentia, ea: see the citation in previous *note*). I have taken it to be τὸ μὴ ἔχειν αἰσθήσιν, or rather the whole clause τὸ ἔχειν μὲν ψυχὴν καὶ νοῦν κριτικόν, αἰσθησιν δὲ μὴ ἔχειν. Either view makes the meaning clear, and the fact that two views are possible would quite sufficiently account for the variant b 5 οὐχ ἔξει. For the teleological assumption cf. 407 b 9—11.

b 6. νῦν δ' οὐδέτερον. Torst. would understand ἀληθές or οἶόν τε, but surely ἔστιν is enough. Cf. 423 b 4 τὸ δ' οὐκ ἔστιν, 434 b 27 τοῦτο δ' ἐν εἴῃ. ἡ μὲν, i.e. ἡ ψυχὴ.

b 7. τὸ δ', i.e. τὸ σῶμα. δι' ἐκεῖνο, i.e. owing to the possession of reason unaccompanied by sense. οὐθὲν ἄρα...8 αἰσθήσεως. The conclusion established is that a body never has life without sensation, unless it be stationary. The exception certainly includes plants and possibly the stars, which Alex. Aphr. regarded as stationary because fixed in their revolving spheres. This conclusion follows from the two premises (1) that sensation is necessary to preserve animals with the power of locomotion from destruction, and (2) that the rational soul in non-stationary and generated animals implies sensation.

434 b 9—24. The body of the animal may conceivably be either simple or composite, i.e. may consist of one element or be compounded of several. If, however, it is to possess sensation, it must be composite, for, if constituted of a single element, it would not have the indispensable sense of touch. Touch the animal must possess, if it is to preserve itself in safety, since by touch alone it perceives tangible objects, i.e. all bodies with which it may come in contact, whereas the other senses perceive through media distinct from themselves. Unless, therefore, it has touch, it will be unable, when it comes into contact with other bodies, to avoid some and take others [§§ 5, 6]. Hence taste is a special form of touch. Food, the object of taste, is a tangible body, no nutriment being derived from colours, sounds or odours: and therefore taste, the sense which has for its object what is not only tangible but nutritive

as well, must be a variety of touch. Thus taste and touch are the two indispensable senses, and without touch no animal can exist [§ 7].

434 b 9 ἀλλὰ μὴν εἴγε αἰσθησιν ἔχει... 10 μεικτόν. Whether the animal possesses sensation or not, it will still be true that the body must be either simple or compound. The meaning is, therefore, "taking the case of those animals which possess sensation, let us consider the constitution of their bodies. The body must consist of a single element or be compounded of more than one element."

b 10. ἀφὴν γὰρ οὐχ ἔξει, as shown above 434 a 27 sq., 423 a 11 sqq. ἔστι δὲ ἀνάγκη ταύτην ἔχειν. Cf. above 414 a 3.

b 11. τοῦτο, i.e. ὅτι ἀνάγκη τὴν ἀφὴν ἔχειν. ἐκ τῶνδε, "from the following considerations," viz. 434 b 11—24. ἐπεὶ γὰρ... 14 τὸ ζῶον. Since it is a body, the animal must come in contact with other bodies near it and must have the discriminating power of touch, if it is to preserve itself: Them. 124, 1 H., 227, 3 Sp. ἐπεὶ γὰρ τὸ ζῶον σῶμα ἐμψυχόν ἐστι, σώματι δὲ ὄντι αὐτῷ ἀνάγκη ἀπτεσθαι τῶν πελαζόντων σωμάτων, ἀνάγκη διὰ τοῦτο τῷ ζῳῳ καὶ ἀπτικῷ εἶναι καὶ κρίνειν τὸ τε οἰκείον καὶ τὸ ἀλλότριον, εἰ μέλλοι σῶζεσθαι.

b 12. ἅπαν ἀπτόν. Here we must stretch the meaning of "tangible" to mean "capable of touching, i.e. coming in contact with" other bodies, whether the simple contact is or is not attended by sensation. The same wider meaning is required elsewhere, e.g. *infra* b 18—22.

b 15. δι' ἐτέρων, "through other things as media." In the case of the telepathic senses the media are distinct from the organs. Cf. 423 b 4—6, 14, 424 b 29.

b 17. εἰ δὲ τοῦτο, i.e. εἰ μὴ δυνήσεται τὰ μὲν [βλαβερά] φεύγειν τὰ δὲ [ὀφέλιμα] λαβεῖν.

b 18. διὸ, because αἰσθητὸν ἀφῇ τὸ ἀπτόν, this being implied in what precedes or inferred from b 12 *convertendo*. This suggestion is due to Miss Alfrod. Cf. 424 b 27 ὅσων μὲν αὐτῶν ἀπτόμενοι αἰσθανόμεθα, τῇ ἀφῇ αἰσθητά ἐστίν. The syllogism then runs: whatever is tangible is perceptible by touch; food is tangible; ergo, food is perceptible by touch. Hence taste, the sense which has to do with the nutritive species of what is tangible, is a variety of touch.

b 22. τοῦ ἀπτοῦ καὶ θρεπτικοῦ, i.e. τροφῆς, which is said b 19 to be τὸ σῶμα τὸ ἀπτόν. Cf. the similar use of θρεπτικόν in *De Sensu* I, 436 b 17 ὁ χυμὸς ἐστὶ τοῦ θρεπτικοῦ πάθος, *ib.* 5, 445 a 30 ὅπερ ὁ χυμὸς ἐν τῷ θρεπτικῷ καὶ πρὸς τὰ τρεφόμενα, a 8 διὸ καὶ τὸ σφραγιστὸν τῶν θρεπτικῶν ἐστὶ πάθος τι (ταῦτα δ' ἐν τῷ ἀπτῷ γένει). On the point whether food itself, τὸ σῶμα τὸ ἀπτόν, or its flavour is more properly called the object of taste see 422 a 10 τὸ σῶμα ἐν ᾧ ὁ χυμὸς, τὸ γευστόν, *note*. αὐτὰ μὲν οὖν, the senses of touch and taste.

434 b 24—435 a 10. The other senses exist in order to well-being; they are found in certain species and not in all animals indiscriminately. An animal capable of progression must have them in order to escape destruction; for it must be aware of objects, not only when in contact with them, but also from a distance. To ensure this, it must be capable of perceiving through a medium, the object affecting the medium and the medium the percipient [§ 8]. The transmission of the modification which occurs in sense-perception through media is similar to the transmission of spatial motion. The first moving cause propels without being propelled, the last member in the series is propelled only and does not propel, the numerous other members both propel and are propelled. The qualitative change or modification which occurs in sense-perception is also a movement, propagated, like the movement of translation, but the movent, i.e.

the sensible object, acts upon the percipient, the subject of the modification, without displacing it. Different bodies exhibit great diversity in the propagation of movements or impressions, wax being affected more than stone, but less than water, and still less than air. Air, the medium of sight and hearing, is eminently mobile, receiving and communicating impressions so long as it remains an unbroken whole. Hence, as regards the reflexion of light, the theory that vision issues as a stream of fire from the eye and undergoes reflexion [Plato, *Timaeus* 46 A] is less satisfactory than that which makes the form and colour of objects affect the air and this air itself in turn affect the eye. If the surface on which the air impinges be smooth, the image remains unbroken, much as if the mark of a seal upon wax penetrated to the other side of the wax [§ 9].

434 b 24. αἱ δὲ ἄλλαι, int. αἰσθήσεις, viz. ὄψις, ἀκοή, ὄσφρησις. τοῦ τε εὖ ἔνεκα. Similarly the use of the tongue, not for taste, but for speech, is ἔνεκα τοῦ εὖ 420 b 17—20. Complexity of structure attends such higher developments, *De Part. An.* II. 10, 656 a 3 τὰ δὲ πρὸς τῷ ζῆν αἰσθησὶν ἔχοντα πολυμορφότεραν ἔχει τὴν ἰδέαν, καὶ τούτων ἕτερα πρὸς ἐτέρων μᾶλλον, καὶ πολυχουστέραν, ὅσων μὴ μόνον τοῦ ζῆν ἀλλὰ καὶ τοῦ εὖ ζῆν ἢ φύσις μετείληφεν. γένει ζώων...25 τιςίν, οἷον τῷ πορευτικῷ. Cf. for the expression πᾶν σῶμα πορευτικόν, 434 a 33. This is an unequivocal statement that locomotion is not a universal attribute of animals, and accords with the recognition of stationary animals in 410 b 19, 432 b 20. οἷον probably means "namely" and not "for example," as it is translated on p. 159. See *De Sensu* I, 436 b 18 as cited in next note. The division into stationary and progressive seems fairly exhaustive.

b 26 εἰ γὰρ μέλλει...27 ἀποθῆναι. So *De Sensu* I, 436 b 18 αἱ δὲ διὰ τῶν ἔξωθεν αἰσθήσεων τοῖς πορευτικοῖς αὐτῶν, οἷον ὄσφρησις καὶ ἀκοή καὶ ὄψις, πᾶσι μὲν τοῖς ἔχουσι σωτηρίας ἔνεκεν ὑπάρχουσιν, ὅπως διώκωσί τε προαισθανόμενα τὴν τροφήν καὶ τὰ φαῦλα καὶ τὰ φθαρτικὰ φεύγωσι, τοῖς δὲ καὶ φρονήσεως τυγχάνουσι τοῦ εὖ ἔνεκα. Thus for progressive animals these telepathic senses are necessary for preservation and at the same time subservient to the higher ends of φρόνησις.

b 27. τοῦτο δ' ἂν εἴη, εἰ, "this will be possible, if" etc., the means required being a medium for each of these three senses, transmitting the impression or movement from the sensible object to the sense.

b 28 τῷ ἐκείνῳ...29 κινεῖσθαι. Ἐκείνο=τὸ μεταξύ, the medium, air or water, as explained in II. cc. 7—9.

b 29. αὐτὸ δεῦρ' ἐκείνου. This is part of the infinitive construction, τῷ αὐτὸ ὑπ' ἐκείνου πάσχειν καὶ κινεῖσθαι. Αὐτὸ is τὸ ζῶον ἢ αἰσθητικόν and ἐκείνου is the medium.

b 29 ὥσπερ γὰρ...30 μέχρι τοῦ μεταβάλλειν ποιεῖ. Μέχρι τοῦ=μέχρι τινός, which, according to Torst., is intended by Bekker's μέχρι τοῦ. I append Torstrik's note: scripsi μέχρι του, violatâ encliticarum regulâ quam et Bekkerus et alii plurimi sibi scripserunt. Recte Sophonias μέχρι τινός. He then cites *Phys.* VIII. 5, 256 b 14—20, presumably for the sake of b 18 δῆλον δ' ἐπὶ τῶν κατὰ τόπον κινουμένων. ἀπτεσθαι γὰρ ἀλλήλων ἀνάγκη μέχρι τινός. The change which takes place in sensation is not φορὰ or κατὰ τόπον κίνησις, but more properly ἀλλοίωσις: and this is illustrated (1) by κατὰ τόπον κίνησις, (2) by the impression of a seal on wax. A. is careful to note 435 a 1 sq. the difference between the motion of translation and the modification which constitutes sensation, viz. that in the latter case there is no displacement. It is merely the transmission of an effect through intermediaries which is the point of similarity in the two cases. Necesse est animalia non solum eo quod tangunt sed etiam procul sentiant: id autem fiet si id quod inter obiectum et sensorium medium interpositum est et patiendi et agendi vices sustinet, ut patiatur ab obiecto, agat in sensorium.

Patitur autem et agit per alterationem. Explicat hanc sententiam A. eo patiendi et agendi genere quod fit per loco motionem: haec enim nobis notior est alteratione. Si in lineâ rectâ plures pilae positae sunt, si primam pellis, secundam illa feriet, haec tertiam, et sic porro. Idem in alteratione fit, nisi quod particulae locum non mutant. Color agit in proximas aeris particulas, hae in vicinas, et sic porro: ultimae in superficiem oculi agunt, superficies in interiores oculi partes, quae sentiunt. Ad eandem rem illustrandam A. utitur sigilli et cerae exemplo: oculus ita afficitur ut charta afficeretur si cera non solum in superficie sed usque ad confinium cerae et chartae per sigillum fingeretur. Si A. novisset photographiam quam vocamus, hoc fortasse usus esset exemplo (Torst., p. 222).

b 31. καὶ τὸ ὦσαν. Torst. (p. 223) changes ὦσαν to ὠσθέν, objecting to the statement "res quae pepulit in causâ est ut alia res pellat." He continues: Manifesto enim legendum est "res pulsa" τὸ ὠσθέν. But cf. *De Insomn.* 2, 459 a 30 τὸ γὰρ κινήσαν ἐκίνησεν ἀέρα τινά, καὶ πάλιν οὗτος κινούμενος ἕτερον. Also the general statement of the case for motion of translation through intermediaries in *Phys.* VIII. 10, 266 b 27—267 a 17, esp. 267 a 2 ἀνάγκη δὴ τοῦτο μὲν λέγειν, ὅτι τὸ πρῶτον κινήσαν ποιεῖ οἶόν τε κινεῖν, ἢ τὸν ἀέρα τοιοῦτον ἢ τὸ ὕδωρ ἢ τι ἄλλο ὃ πέφυκε κινεῖν καὶ κινεῖσθαι. ἀλλ' οὐχ ἅμα παύεται κινεῖν καὶ κινούμενον, ἀλλὰ κινούμενον μὲν ἅμα, ὅταν ὁ κινῶν παύσθαι κινῶν, κινεῖν δὲ ἔτι ἐστίν. In such cases the production of motion does not cease simultaneously with the cessation of the impulse communicated. The top set spinning goes on for a time: the gong continues to sound after the stroke has ended.

435 a 1 οὕτω <καὶ> ἐπ' ἀλλοιώσεως...2 ἀλλοιοῖ. So it is in that species of ἀλλοίωσις which we call sense-perception, except that the sensible causes modification, viz. of the sense-organ, without any displacement: A. does not say of what. As a matter of fact, there is no change of place in either (1) the sensible object or (2) the sense-organ and the percipient. Them. supposes μένοντος to refer to (1), the object: 124, 28 H., 228, 12 Sp. μένοντος ἐν τῷ αὐτῷ τόπῳ τοῦ ἀλλοιούντος. Philop. refers μένοντος to (2), the percipient: 605, 7 ἡ δύναμις, φησὶν, ἡ κατὰ τόπον κινούσα οὐκ ἐὰν ἐν τῷ αὐτῷ τόπῳ τὸ κινούμενον, τὸ δὲ αἰσθητὸν ἀλλοιοῦν τὴν αἰσθησιν ἐν τῷ αὐτῷ τόπῳ αὐτὴν ἐᾷ. The latter view is to be preferred. Even in spatial motion the first member of the series is assumed to be ἀκίνητον b 32 *συμφα*, so that there would be no difference in this respect between *φορά* and ἀλλοίωσις. The ungrammatical genitive absolute does occur in A. Cf. 420 b 26 διὸ ἀναγκαῖον εἶσω ἀναπνεομένον εἰσέναι τὸν ἀέρα and *note*. There seems to be no reason to substitute, with Torst., the medium for the sensible object, the proximate for the ultimate efficient cause: indeed, it would be difficult to establish this immobility of the medium in the case of hearing. Cf. 419 b 25—27, b 34—420 a 2, 4—9, 25 sq., *De Sensu* 6, 446 b 8 διὰ τὸ μετασχηματίζεσθαι φερόμενον τὸν ἀέρα, *ib.* b 30 δοκεῖ δ' ὁ ψόφος εἶναι φερόμενον τινὸς κίνησις. A. admits the fact that there is *φορά* in hearing and smelling and that the ἀλλοίωσις takes time to travel along the medium, although seeing, he contends, takes place instantaneously. See the question discussed *De Sensu* 6, 446 a 20—447 a 11.

a 3. ἐκινήθη, int. ὁ κηρός. λίθος δὲ...4 πόρρω, int. κινεῖται.

a 4 ὁ δὲ ἀήρ...5 ἐὰν μὲν καὶ εἰς ἡ. Cf. 419 b 21—420 a 2.

a 5 διὸ καὶ περ...8 ἡ εἰς. Philop. detects hyperbaton: 605, 31 ἀγανωστέον δὲ τὴν λέξιν ἐν ὑπερβατῷ οὕτω· διὸ βέλτιον τὸν ἀέρα πάσχειν ὑπὸ τοῦ χρώματος ἢ τοῦ σχήματος, ἢ ὑποτίθεσθαι τὴν ὄψιν ἐξιοῦσαν ἀνακλᾶσθαι, "it is better to suppose that the air is affected by colour or shape than to suppose" [with Empedocles and Plato, *Tim.* 45 B—46 C] "that vision issues from the eye and is reflected

back to it." Refraction, as a term of modern optical science, does not correspond with ἀνάκλασις. Torst., not recognising the hyperbaton, bracketed the words *περὶ ἀνακλάσεως* as a sort of marginal heading: *Ferri non possunt, propterea quod non id demonstrat A. τῆς ἀνακλάσεως alterum modum alteri esse praeferendum, sed ἀνάκλασιν in hac re omnino negat esse* (p. 224). Plato in his explanation of vision (*Tim.* l.c.) assumes three fires (1) that which streams from the eye, the visual current, *ὄψεως ῥεύμα*, or body which sees, (2) that of daylight in the air, (3) that in the object seen, which is the cause of the visibility. The first two are homogeneous and combine into a uniform substance. This substance, meeting the rays from the visible external object, receives the motions of these rays and transmits them to the eye. This theory of vision Plato extends to the seeing of images in a mirror as follows. A mirror, owing to its smooth shining surface, arrests the rays from visible objects and brings them into contact with the visual current which has combined with the fire of daylight. Upon the coalescence of these two fires, the external fire from the object imaged and the internal fire from the eye, indirect vision takes place, i.e. the objects are seen in the mirror. See Archer-Hind *ad loc.* From the similarity of the language to that of 419 b 27—420 a 2 it is possible that A. here has echo in his mind as well as reflection of light. See *note* on 420 a 1 *λείον*.

a 8. ἐπὶ δὲ τοῦ λείου ἐστὶν εἰς. Smooth surfaces, such as water and polished metal (cf. 419 b 27—420 a 2 and *notes*), allow a layer of air to retain its unity and continuity, while rough unequal surfaces full of cavities and windings break up the air. οὗτος, int. ὁ αἶθρ.

a 9. μέχρι τοῦ πάρατος, through the whole depth or thickness of the wax to the other side.

### CHAPTER XIII.

**435 a 11—b 3.** The bodies of animals cannot consist exclusively of a single element. It has been proved that, if they have not touch, they cannot have any other sense. The other elements, except earth, might become organs of sense, but, as they serve as indirect media, none of them would constitute a body capable of touch, i.e. the one sense which operates, not through an indirect medium, but by direct contact of the animal with the object. Nor can the animal body consist solely of earth, for touch is a sort of medium for all tangibles and the organ of touch is capable of receiving all tangibles, and not merely such as are qualities of earth. Hence with the tissues which consist of earth only, with bones, hair and the like, we have no sensation, and plants, which consist mainly of earth, have no sensation. Thus the organ of the one indispensable sense, touch, cannot consist exclusively either of earth or of any one of the other elements which serve as media for the telepathic senses [§ 1].

**435 a 14.** πᾶν, ὥσπερ εἴρηται, viz. 434 b 10 sqq., the proof extending to b 24. In 423 a 12—15 the proof is different, viz. that neither air nor water would constitute a solid body such as the animal requires. πᾶν, the whole body, and not any separate organ, as in the case of the higher senses. Only the surface of the body would come into contact with the external object, so that πᾶν practically means "at every point of the surface." From the remarks below a 24 about hair being insensible it follows that A. looked upon the hair as an excrescence and would restrict the surface of the body to flesh.

a 14. τὰ δὲ ἄλλα ἔξω γῆς, int. στοιχεῖα: αἰσθητήρια will then be predicate. A. should rather have said "air and water." See 425 a 3 τῶν δὲ ἀπλῶν ἐκ δύο τούτων αἰσθητήρια μόνον ἐστίν, ἐξ ἀέρος καὶ ὕδατος...τὸ δὲ πῦρ ἢ οὐθενὸς ἢ κοινὸν πάντων (since none of the sense-organs is independent of heat). From this interpretation of our passage Professor Beare dissents. He says (*Greek Theories*, p. 198, n. 1): "The obvious opposition here between τὰ ἄλλα and ἡ ἀφή below" (435 a 17) "makes it certain that by ἄλλα is meant not στοιχεῖα, but αἰσθητήρια." Accordingly he renders: "Now the other organs of sense might conceivably be formed without earth, since they all effect sensation by some medium or third thing, external to the body, through which each perceives its object." The hyperbaton in itself is no objection to the proposed construction, but the close proximity of τὰ ἄλλα to ἔξω γῆς would naturally suggest that earth is one of the class of things to which τὰ ἄλλα belong. The preposition properly means "outside of," "apart from," "except," and its force is strained if γίνεσθαι ἔξω means "to be formed without including," i.e. to exclude from their composition, earth. Nor am I satisfied with the opposition which Prof. Beare discovers between τὰ ἄλλα αἰσθητήρια and ἡ ἀφή, for he has himself quite rightly pointed out (p. 245) that sometimes, e.g. 424 b 1 sqq., A. has used αἰσθητήρια in a narrower sense and treats the mediated organs of sight, hearing and smell as if they alone were called αἰσθητήρια.

a 15 πάντα δὲ τῷ δι' ἐτέρου...16 διὰ τῶν μεταξύ. See 424 b 24 sqq.

a 17. αὐτῶν, int. τῶν αἰσθητῶν, or more specifically τῶν ἀπτῶν. So 423 b 11, 424 b 28, 29, 426 b 16. τοῦνομα. The sense of touch, touching, derives its name from the contact which is its necessary condition, i.e. the contact between the external body and the surface of the animal body. Bodies can be in contact without any sensation resulting. See *note* on 434 b 12. Cf. 423 a 23—b 1 and 424 a 32—b 3, where plants are said to have no sense of touch, though not only in contact with but affected by, i.e. warmed or cooled by, contact with external objects. As just before A. has said or implied that ἀφή, the sense of touch, discerns by touching, i.e. being in direct contact, so immediately afterwards he reminds us that the other or telepathic senses also discern by contact, τῇ ἀφῇ, though by indirect contact.

a 18 καίτοι...19 ἐτέρου. Cf. 423 b 1 sqq., where it is shown that for touch the flesh is an inseparable medium, while the three higher senses perceive objects at a greater distance than tangibles: cf. 423 b 4—6. See 419 a 26—28, 434 b 29—435 a 2.

a 19. αὕτη δὲ δοκεῖ μόνῃ δι' αὐτῆς. Strictly construed, this would make flesh the organ of touch, whereas A. has declared it to be the medium and not the organ 423 b 22 sq. But δοκεῖ implies popular opinion, to which he does not necessarily commit himself, cf. 427 a 19 sq. If the interpretation of 426 b 15—17 which I have given is correct, A. in that passage, as also in 424 b 27—30, has, in spite of his dissent in II., c. 11, returned to the popular opinion and used it where his distinction is unimportant for the question under discussion. See *note* on 422 b 34, p. 405.

a 19. τῶν μὲν τοιούτων στοιχείων, the elements which serve for the construction of the sense-organs in the narrower sense of the word noted above on a 14, i.e. the organs of sight, hearing and smell, which might be formed of air, water and fire. Cf. *Simpl.* 327, 10 συμπεραίνεται οὖν, ὡς τῶν λεπτομερῶν στοιχείων καὶν τινα ἢ αἰσθητήρια, ἀλλ' οὐκ ἂν γένοιτο τοιοῦτον αἰσθητήριον, οἷον τὸ τοῦ ὄλου ζῶντος ἐστὶ σώμα.

a 21. γῆινον. Cf. a 25 *infra* γῆς ἐστίν. See also 410 a 30 sq. and 423 a 12—15, where it is assumed that the body cannot consist solely of earth. πάντων...

μεσότης. From 424 a 32—b 3 we learn that plants, although they are affected by tangibles, have no sense of touch, αἴτιον γὰρ τὸ μὴ ἔχειν μεσότητα (424 b 1), i.e. (ζδ. b 2) τοιαύτην ἀρχὴν οἷαν τὰ εἶδη δέχεσθαι τῶν αἰσθητῶν, words which clearly explain what is meant by μεσότης. A change (κίνησις) is necessary for perception, and a sensible which is equally warm or equally cold with the sense-organ will not produce a change of temperature (423 b 31—424 a 10).

a 22 οὐ μόνον ὅσαι...23 ἀπάντων. Not only the different qualities of earth, but the different qualities of body generally as such (423 b 27—29), are tangible.

a 24 τοῖς ὁστοῖς...25 γῆς ἐστίν. A body constituted of earth alone would be incapable of apprehending qualities which belong to the other elements but not to earth (cf. 410 a 30—b 2).

435 b. διὰ τοῦτο...ὅτι γῆς ἐστίν. If a single bodily part, consisting wholly or mainly of earth, is *ipso facto* incapable of sensation, much more will this be the case with plants, in the entire composition of which the element of earth preponderates. Cf. note on a 17 *supra*, τοῦνομα.

b 2. ἄλλην, int. αἰσθῆσιν. Cf. 435 a 12 sq., 415 a 3 sq.

b 2. τοῦτο δὲ τὸ αἰσθητήριον, i.e. τὸ ἀπτικόν. We note that the form of the inference implies that ἀφή is an αἰσθητήριον and thus the term ἀφή does not escape the ambiguity so notorious for ὄψις, ἀκοή, which we have also found in ὁσφρησις and γεύσις 423 b 19, 422 a 32 sq. As we learn from 423 a 12—15 flesh and whatever is analogous to flesh, whether it is properly the organ or the medium of touch, must be a compound substance containing the other elements as well as earth. This sentence completes the proof of the proposition enunciated at the beginning of the chapter, 435 a 11, viz. "it is evident that the body of an animal cannot consist solely of a single element."

435 b 4—19. Touch is the only sense, the lack of which involves the destruction of the animal. Without touch a living thing would not be an animal, but a plant. Colours, sounds and smells in excess do not injure the animal, but destroy the corresponding sense-organ. Incidentally they may destroy animal life, if conjoined with a shock or blow or other fatal mischief operating by contact. So, too, poison operates fatally in so far as incidentally it affects touch [§ 2]. Tangibles in excess, however, are destructive to the whole animal, for the sense which they destroy is the one sense with which the animal cannot dispense [§ 3 to 435 b 19].

435 b 5 οὐτε γὰρ...6 μὴ ζῶν. From the parallel clause which follows (b 6 οὐτε...7 ταύτης) we are justified in supplying ὄν with μὴ ζῶν. If anything which has life, ζῶν τι, μετέχον τι ζωῆς, is without the sense of touch, we do not call it an animal (ζῶν), but only a plant. The stress of predication in this and similar sentences is on the participial phrase μὴ ζῶν [int. ὄν]. The words literally mean "if it be not an animal [but only a plant] it cannot have this sense of touch." The implication is, as already stated, "a living thing cannot have the sense of touch without being *ipso facto* an animal, as distinct from a plant." This accords with a previous doctrine of the treatise (411 b 27—30, 413 a 22—b 4, 414 a 2 sq., a 32—b 1, b 3, b 6—14, 415 a 1—6). It is restated *infra* 435 b 16 sq.

b 6 οὐτε ζῶν ὄν...7 πλὴν ταύτης. The facts are given 413 b 4—7, 414 a 2—3, 415 a 4—6 ἀφή...αἰσθῆσιν.

b 9. ἀλλὰ μόνον τὰ αἰσθητήρια. See on 424 a 28—32, 426 a 30—b 2, b 7. Cf. 429 a 31—b 3.

b 10. κατὰ συμβεβηκός, nisi quid coniunctum est, quod simul in tactum agat (Trend.). οἶον...11 πληγῇ. Cf. 424 b 10—12. A. is thinking of the thunderbolt, Simpl. 328, 35—39. In commenting on 424 b 10—12 I omitted to cite the

passage from *De Caelo* II. 9, 290 b 31 sqq., where A., possibly accommodating himself to the popular view, most unmistakably describes the splitting of stones and the hardest of bodies as the effect of very loud noises, such as thunder. The passage is interesting because A. starts from the position which he reaches at the end of *De A.* II., c. 12, viz. that bodies inanimate and therefore incapable of sensation may nevertheless be affected by sensibles. Arguing against the Pythagorean "music of the spheres," A. concedes that the authors of that theory make some show of explaining why the celestial sounds should fail to make us hear them; but it is strange, he urges, that we should not be affected by the sounds even apart from sensation: 290 b 31 οὐ γὰρ μόνον τὸ μηθὲν ἀκούειν ἀποπον, περὶ οὗ λύειν ἐγχειροῦσι τὴν αἰτίαν, ἀλλὰ καὶ τὸ μηδὲν πάσχειν χωρὶς αἰσθήσεως. Here should be compared *De A.* 424 b 16 τί οὖν ἐστὶ τὸ δσμάσθαι παρὰ τὸ πάσχειν τι; κτέ. A. continues 290 b 34 οἱ γὰρ ὑπερβάλλοντες ψόφοι διακναίουσι καὶ τῶν ἀψύχων σωμάτων τοὺς ὄγκους, οἷον ὁ τῆς βροντῆς δίοτσησι λίθους καὶ τὰ καρτερώτατα τῶν σωμάτων. To ascribe great and mischievous physical effects not to the air as in a gale, not to anything like a fireball or thunderbolt or the all-dreaded thunder-stone descending from the clouds, but to mere noise, is a curious error to result from association.

b 11. καὶ ὑπὸ δραμάτων. Trend. asks: quomodo a specie (ὑπὸ) moveri dici potest? A. must be thinking of animals killed by lightning, though he probably had no very clear conception of the process, which Simpl. (329, 9) represents as follows: οὕτω δὲ καὶ τὸ ὁρατὸν οἶον ἢ φλόξ οὐχ ὡς φωτοειδὴς ἄγαν καὶ ἀσύμμετρος τῷ ὅμματι φθείρει τὸ ζῶον (ταύτη γὰρ μόνον τὸ ὁρατικόν [int. φθείρει]), ἀλλ' ὡς θερμὴ ἀθρόως ἐνίοτε προσπίπτουσα· προσπίπτει δὲ ὡς ἀπτόν ἀπτικῷ τῷ ὄλφ. καὶ δσμή, the case of suffocation by a noxious vapour. Simpl. 329, 8 (the sentence is mutilated) διὰ τῶν παθητικῶν ποιότητων ἀσυμμετρίαν φθεῖρον τὸ δλον, ἀλλ' οὐχ ὡς δυσῶδες. Cf. 421 b 23—25. In any case, on A.'s view, the shock to the organ of sight or smell is conjoined with another and fatal shock to the entire system (ἔτερα κινεῖται).

b 12 καὶ ὁ χυμὸς δὲ... 13 ταύτη φθείρει. Take death from the effect of poison. Poison, *quā* gustable, acts only upon the sense of taste, but, like every gustable, poison is also a tangible (422 a 8, 11, 423 b 2 sq., 434 b 18 sq., 21), and, if a tangible, capable of reacting upon the flesh, the organ (or medium) of touch; and it is therefore *quā* tactile that incidentally it kills.

b 15. παντὸς μὲν γὰρ... αἰσθητήριον. Cf. 424 a 28—30 with the parallel passages in the notes ad loc.

b 16. τὴν ἀφήν, the faculty residing in the sense-organ (cf. *infra* b 17 sq.), the relation between the two being that laid down 424 a 24—28. ταύτη δὲ ὄρισται τὸ ζῆν. With the infinitive supply the dative τῷ ζῳῳ. If we compare 415 b 12 sq., 431 a 19, 431 b 3, this seems a more probable supplement than either the genitive or the accusative. Plants are ζῶντα, though not ζῳα. Cf. 413 a 22—b 4. The reference in ὄρισται is probably to the present chapter, 435 b 4—7. See notes ad loc.

b 19. μόνην ἔχειν ταύτην, i.e. τὴν ἀφήν. The neuters μόνον, τοῦτο would have been ambiguous in view of αἰσθητήριον preceding.

435 b 19—25. The other senses, as said above, are means not to being, but to well-being. Sight is necessary in order that the animal assumed to live in air or water may see. Taste is required because of the pleasurable and painful, in order that it may discriminate them in food and feel a desire for food and regulate its movements accordingly. Hearing it possesses that something may be signified to it and a tongue that it may signify something to another [§ 3].



This summary should be compared with the fuller and more precise statement in *De Sensu* I, 436 b 18 sqq., which differs from it in several important particulars. (1) In *De Sensu*, having previously, 436 b 12 sq., associated taste with touch as necessary to all animals (as indeed was done *De A.* 434 b 22), A. treats of sight, hearing and smell, but not taste, as functions of animals capable of locomotion. An animal capable of locomotion is *pro tanto* more perfect than one incapable: cf. *Simpl.* 329, 23 *ὡς δὲ πορευτικὸν τοῦ ζῴου ἀπλῶς [ῥντος] τελειότερον.* (2) These three senses in all animals which possess them subserve a double purpose: (a) they are necessary to existence, *σωτηρίας ἕνεκεν*, 436 b 20, (b) they promote well-being, *τοῦ εὖ ἕνεκα*, 437 a 1. (3) It is utility to animals endowed with intelligence that alone is there declared to be *τοῦ εὖ ἕνεκα*. (4) Superior utility is claimed for the sense of hearing, even above sight, but such utility belongs to it only incidentally, 437 a 11 *κατὰ συμβεβηκὸς δὲ πρὸς φρόνησιν ἢ ἀκοή πλείστον συμβάλλεται μέρος.* (5) The part played by the tongue as the organ of speech is not mentioned. There can be no doubt that this account in *De Sensu* must be taken as the authoritative statement, supplementing the condensed and hasty sketch before us in *De A.*

435 b 20. *ὥσπερ εἴρηται*, viz. 434 b 24. *οὐ τοῦ εἶναι ἕνεκα ἀλλὰ τοῦ εὖ.* For *εἶναι* in the sense of "exist" cf. 415 b 12 sq., 416 b 14, 16, 20, 434 b 7. Cf. 420 b 20, *note*. *Τὸ εὖ* is there opposed to what is necessary (*τὸ ἀναγκαῖον*). So here it is opposed to bare existence (*τὸ εἶναι*). As is stated 413 a 30 sq., b 7 sq., 415 a 1 sq., animal life needs nourishment for its support: to provide this nourishment touch, or its variety, taste (434 b 18—23), would suffice. What is said in 413 a 30 sq. *καὶ ζῆ διὰ τέλους ἕως ἄν δύνηται λαμβάνει τροφήν* (cf. 434 a 22—26) is as true of the lowest forms of animals as it is of plants. All that goes beyond this indispensable minimum A. here puts down to the account of well-being (*τὸ εὖ*) or a higher life (*τὸ εὖ ζῆν*) to which the telepathic senses are the necessary means and adjuncts; from the humble beginnings said (*De Sensu* I, 436 b 20) to be *σωτηρίας ἕνεκεν* to the lofty achievements incidentally realised in animals endowed with intelligence, and particularly in man (*De Sensu* I, 437 a 2—15).

b 21. *ἐν ἀέρι καὶ ὕδατι*, int. *ἐστίν*: the two elements "in" which *ὡς ἐν τόπῳ* animals live, 423 a 29—b 1. Animals are roughly divided into terrestrial and aquatic. Cf. *Meteor.* IV. 4, 382 a 6 *καὶ ἐν γῇ καὶ ἐν ὕδατι ζῶα μόνον ἐστίν, ἐν ἀέρι δὲ καὶ πυρὶ οὐκ ἔστιν, ὅτι τῶν σωμάτων ὕλη ταῦτα.* Land-animals are surrounded by or immersed in air, *τὸ περιέχον*: *Phys.* IV. 4, 211 a 24 *λεγόμενα εἶναι ὡς ἐν τόπῳ ἐν τῷ οὐρανῷ, διότι ἐν τῷ ἀέρι, οὗτος δ' ἐν τῷ οὐρανῷ, καὶ ἐν τῷ ἀέρι δὲ οὐκ ἐν παντί, ἀλλὰ διὰ τὸ ἔσχατον αὐτοῦ καὶ περιέχον ἐν τῷ ἀέρι φανέν εἶναι.*

b 22. *ὅπως ὁρά.* Cf. *Metaφῆ.* 1050 a 9 *τέλος δ' ἡ ἐνέργεια, καὶ τούτου χάριν ἡ δύναμις λαμβάνεται. οὐ γὰρ ἴσα ὅψιν ἔχουσιν ὁρῶσι τὰ ζῶα, ἀλλ' ὅπως ὁρῶσιν ὅψιν ἔχουσιν.* Cf. *De Sensu* I, 437 a 5 *διαφορὰς μὲν γὰρ πολλὰς καὶ παντοδαπὰς ἡ τῆς ὁψεως ἀγγέλλει δύναμις διὰ τὸ πάντα τὰ σώματα μετέχειν χρώματος, ὥστε καὶ τὰ κοινὰ διὰ ταύτης αἰσθάνεσθαι μάλιστα, Metaφῆ.* 980 a 21—27. *ὅλως δ' ἔπει ἐν διαφανεί, int. ἐστίν.* Transparency is an attribute both of air and water 418 b 6.

b 22 *γεῦσιν δὲ... ἐπιθυμῇ.* This was explained 414 b 11—14, which serves to qualify and interpret 414 b 3—9. Cf. also *De Sensu* I, 436 b 15—18 *ἡ δὲ γεῦσις διὰ τὴν τροφήν [int. ἀκολουθεῖ πᾶσιν ἐξ ἀνάγκης]. τὸ γὰρ ἡδὺ διακρίνει καὶ τὸ λυπηρὸν αὐτῇ περὶ τὴν τροφήν, ὥστε τὸ μὲν φεύγειν τὸ δὲ διώκειν.*

b 24. *καὶ κινῆται.* Possibly *κατὰ τόπον* should be supplied. Cf. 434 b 16 *ἀπτόμενον δέ, εἰ μὴ ἔξει αἰσθάνουσιν, οὐ δυνήσεται τὰ μὲν φεύγειν τὰ δὲ λαβεῖν, and De Sensu* l.c. 436 b 16—18, cited in last *note*. But the part played by taste as

an incentive to seek food is small in comparison with that played by smell. Further, it would generally involve the mechanism of *φαντασία*, upon which A. here does not enter. As noticed above in the passage of *De Sensu*, A. associates taste with touch, as necessary to existence and therefore found in all animals, rather than with the higher senses τοῦ εἶναι *ἐνεκα*. Simplicius (329, 24 sq.) naturally enquires why taste (γεῦσις) is now reckoned among the higher senses when we were previously told that, as a variety of touch, ἀφή τις, it was absolutely necessary for existence. He can only surmise that taste is a higher sense as contributing to the prolonged existence of the animal; 329, 26 διότι πρὸς τὸ διαμένειν μάλλον...καὶ πρὸς τὸ ἐπὶ πλεόν εἶναι, ἀλλ' οὐ πρὸς τὸ εἶναι ἀπλῶς συντελεῖ.

b 24. ὅπως σημαίνεται τι αὐτῷ. This reading agrees with Themistius and the old Latin translation. Torstrik has the merit of expelling the absurd σημαίνει τι αὐτῷ and of introducing the passive and αὐτῷ. If he is right in rejecting the last clause of the treatise, he is also right in not inserting τι. γλώτταν δέ. Trend. cites *De Resp.* 4, 476 a 17 τῷ αὐτῷ ὀργάνῳ χρῆται πρὸς ἀμφω ταῦτα ἡ φύσις, καθάπερ ἐνίοις τῇ γλώττῃ πρὸς τε τοὺς χυμοὺς καὶ πρὸς τὴν ἐρμηνείαν. Linguae inter sensus mentionem mireris. Sed ab auditu vel invita offerebatur. Neque a consilio aliena. Nam etiam linguae sermone, si vitam, detractis ornamentis, ad necessitatis angustias redigere velis, vitae conservatio carere potest. This is a lame apology, for A. has been dealing with animals in general and not with man in particular. And, if we grant to M. Rodier that the use which has just been assigned to hearing only belongs to it *per accidens*, this is hardly a sufficient reason for introducing as a pendent an adventitious use of the organ of a different sense which has already been dealt with. However, Themistius must have found the remark in its present context and, though it might seem more appropriate to *De Part. An.*, it is fully endorsed by the teleological passage 420 b 16—20. Plato also opposes the reception of food, implying the necessary use of the tongue, to the utterance of speech which is the employment of that organ τοῦ εἶναι *ἐνεκα*, *Tim.* 75 E: "For all that enters in to give sustenance to the body is of necessity; but the stream of speech which flows out and ministers to understanding is of all streams the most noble and excellent" (Archer-Hind's translation).

Here the teleological study breaks off. A. does not go on to consider the part taken by *φαντασία* or *λογισμός* in those animals which possess these powers, although some such discussion might have been expected from the words of 414 b 33 διὰ τίνα δ' αἰτίαν τῷ ἐφεξῆς οὕτως ἔχουσι σκεπτέον: cf. 415 a 10 οἷς δ' ἐκείνων ἕκαστον, οὐ πᾶσι λογισμός.

## APPENDIX.

The age and authority of Theophrastus entitle him to a respectful hearing when he comments upon the teaching of his master. I accordingly follow Trendelenburg in citing the more important of the few fragments of his, taken from the treatises *Περὶ φυσικῶν* and *Περὶ κινήσεως*, which relate to the subject of intellect. Themistius at the end of his own commentary on *III.*, c. 5 adduces Theophrastus as the earliest and most important witness. Apparently he quotes two separate passages *verbatim* and gives one other short sentence and the condensed outline of passages which he does not quote. Priscianus Lydus furnishes a much larger number of excerpts, mostly short scraps. When we compare the manner in which citations common to the two are presented in Themistius and in Priscian, we find a great diversity of arrangement. If the order of the sentences in Themistius is consecutive, that in Priscian certainly is not. Either the one or the other rearranged his author to suit his particular purpose, and the more probable view is that Priscian did so. Theophrastus may have repeated the phrase *οὐχ οὕτω ληπτέον* once, as a comparison of *Prisc.* 25, 28, attested by *Them.* 107, 34, with *Prisc.* 26, 2 sq. certainly suggests. But when Priscian uses the phrase a third time (30, 29), it is probable that this is not a fresh citation in a different connexion, but that Priscian is reverting to a passage formerly cited. Cf. 30, 29 *διό φησιν, οὐχ οὕτω ληπτέον, ἀλλ' ὡς ἐλέχθη πρότερον ἐν οἷς ἡξίου κατὰ ἀναλογίαν κτέ.* with 26, 2 sq. cited below. Cf. also the similar repetitions of *τί τὸ πάθος ἢ ποία μεταβολή* 28, 15 from 27, 10, of *ὑπὸ τίνος οὖν ἡ γένεσις, εἴτε ἔξω καὶ δυνάμει εἴτε οὐσίας* 31, 24 sq. from 31, 11 sq., of *πῶς ἐκάτερα* 33, 17 from 32, 31, of *οἰκείως ληπτέον* 35, 23 sq. from 34, 30 sq., and the like. In some cases, as in excerpts 2, 3, 7, 8, it is not easy to determine whether Priscian is citing Theophrastus or Aristotle directly, for he is not always exact in his citations. See, e.g., *Prisc.* 36, 9—13, where he professes to give the substance of Aristotle, though Bywater can find no nearer parallel than *De A.* 430a 10, 430a 3. The version is repeated 36, 25. Cf. also *Prisc.*

37, 6 sq. with *De A.* 430 a 5 sq. However, as Theophrastus would appear on the evidence of excerpts 1 and 12 to have repeated Aristotelian phrases both *verbatim* and with slight variations (cf. my note on *παρεμφαινόμενον*, 429 a 20), I have given him the benefit of the doubt. The text here presented differs from that of Wimmer. For Themistius I have followed Heinze, except once, where I think Heinze's second thought *ὑπ' ἁσωμάτου* decidedly preferable to his first thought *ὑπὸ σώματος* (Them. 108, 2 sq.). Cf. Prisc. 28, 29 *καὶ πῶς νοητὸν ὑπὸ νοητοῦ πάσχει*; For Priscian I have followed Bywater. In what is common to both Themistius and Priscian I follow the version of the former, with the one exception just mentioned.

In dealing with his subject Theophrastus appears to start with the account as we find it in *De A.* III., cc. 4 and 5. The excerpts which I have numbered 1—7 seem all to refer to 429 a 10—29. In no. 8 there is a citation of 429 b 5—9, no. 9 deals with the subject of 429 b 10—22, nos. 10, 11 relate to the *ἀπορίαι* discussed in 429 b 22—430 a 9, no. 12 to III., c. 5 and no. 13 to the same subject as I., c. 4, 408 a 34—b 29. Under the numbers 1, 4, 5, 7, 9, 10 I have ventured to put together excerpts which seem closely related, though I am well aware that they may have been separated in Theophrastus by matter which Priscian has omitted.

1. ὁ δὲ νοῦς πῶς ποτὲ ἔξωθεν ὦν καὶ ὥσπερ ἐπίθετος ὁμῶς συμφυῆς; καὶ τίς ἡ φύσις αὐτοῦ; τὸ μὲν γὰρ μηδὲν εἶναι κατ' ἐνέργειαν, δυνάμει δὲ πάντα, καλῶς, ὥσπερ καὶ ἡ αἴσθησις. οὐ γὰρ οὕτως ληπτέον ὥς οὐδὲ αὐτός [int. ὁ Ἀριστοτέλης ἔλαβεν]. ἐριστικὸν γάρ· ἀλλ' ὥς ὑποκειμένην τινὰ δύναμιν καθάπερ καὶ ἐπὶ τῶν ὑλικῶν. ἀλλὰ τὸ ἔξωθεν ἄρα οὐχ ὥς ἐπίθετον, ἀλλ' ὥς ἐν τῇ πρώτῃ γενέσει συμπεριλαμβανόμενον θετέον.

πῶς δέ ποτε γίνεται [int. ὁ νοῦς] τὰ νοητὰ καὶ τί τὸ πάσχειν <ὑπ' > αὐτῶν; δεῖ γάρ [int. πάσχειν], εἴπερ εἰς ἐνέργειαν ἤξει καθάπερ ἡ αἴσθησις. ἁσωμάτῳ δὲ ὑπ' ἁσωμάτου τί τὸ πάθος ἢ ποία μεταβολή; καὶ πότερον ἀπ' ἐκείνου ἢ ἀρχῇ ἢ ἀπ' αὐτοῦ; τῷ μὲν γὰρ πάσχειν ἀπ' ἐκείνου δόξειεν ἂν (οὐδὲν γὰρ ἀφ' ἑαυτοῦ τῶν ἐν πάθει). τῷ δὲ ἀρχὴν πάντων εἶναι καὶ ἐπ' αὐτῷ τὸ νοεῖν, καὶ μὴ ὥσπερ ταῖς αἰσθήσεσιν, ἀπ' αὐτοῦ.

τάχα δ' ἂν φανείη καὶ τοῦτο ἄτοπον, εἰ ὁ νοῦς ὕλης ἔχει

φύσιν μηδὲν ὧν ἅπαντα δὲ δυνατός. οὐχ οὕτω δὲ ληπτέον οὐδὲ πάντα νοῦν, ἀλλὰ δεῖ διελεῖν. ποῖος οὖν καὶ τίς ἡ διαίρεσις; ἡ μὲν γὰρ ὕλη οὐ τόδε τι, ὁ δὲ νοῦς εἰ μὴ οὕτω, τί ἂν ἕτερον; κατὰ ἀναλογίαν οὖν καὶ τὸ δυνάμει ληπτέον ἐπὶ τοῦ ψυχικοῦ νοῦ· ὥς γὰρ πρὸς τὸν ἐνεργείᾳ νοῦν.

Them. 107, 31—34, Them. 107, 34 sq. (= Prisc. 25, 28 sq.), Them. 107, 35, Them. 108, 1—6 (= Prisc. 27, 8—14), Them. 108, 6 sq. (= Prisc. 26, 1 sq.), Prisc. 26, 2—6.

7. συμπεριλαμβάνον codd. Them., correxit Brandis || 11. ὑπὸ σωματός Them. || 15. virgulam post μὴ Heinze, post νοεῖν transposui.

Cf. Them. 107, 30 ἄμεινον δὲ καὶ τὰ Θεοφράστου παραθέσθαι περὶ τε τοῦ δυνάμει νοῦ καὶ τοῦ ἐνεργείᾳ. περὶ μὲν οὖν τοῦ δυνάμει τάδε φησὶν· ὁ δὲ νοῦς πῶς... (108, 7) ἅπαντα δὲ δυνατός. καὶ τὰ ἐφεξῆς μακρὸν ἂν εἴη παρατίθεσθαι καίτοι μὴ μακρῶς εἰρημένα, ἀλλὰ λίαν συντόμως τε καὶ βραχέως τῇ γε λέξει. τοῖς γὰρ πράγμασι μεστά ἐστὶ πολλῶν μὲν ἀποριῶν, πολλῶν δὲ ἐπιστάσεων, πολλῶν δὲ λύσεων. ἔστι δὲ ἐν τῷ πέμπτῳ τῶν Φυσικῶν, δευτέρῳ δὲ τῶν Περὶ ψυχῆς, ἐξ ὧν ἀπάντων δηλὸν ἐστίν, ὅτι καὶ περὶ τοῦ δυνάμει νοῦ σχεδὸν τὰ αὐτὰ διαποροῦσιν, εἴτε ἔξωθεν ἐστὶν εἴτε συμφυῆς, καὶ διορίζειν πειρῶνται, πῶς μὲν ἔξωθεν πῶς δὲ συμφυῆς. (Frag. LIII b W, p. 226—227, 9.)

2. ὁ νοῦς ἐστὶ τὰ νοητά. Prisc. 28, 3.

Prisc. 28, 1 διὸ μία ἡ ἀμφοῖν, τοῦ τε νοῦ περὶ τὰ νοητὰ καὶ τῶν νοητῶν εἰς τὸν νοῦν ἡ ἐνέργεια. καθὼ οὐ διέσπασται ἀλλ' ὁ νοῦς... τὰ νοητά. Cf. *De A.* 429 b 30.

3. τῇ οὐσίᾳ ἐστὶν ἐνέργεια. Prisc. 28, 12.

Prisc. 28, 11 sq. καὶ γὰρ τῇ... ἐνέργεια δευτέρως καὶ ὁ δυνάμει νοῦς. Cf. *De A.* 430 a 18.

4. εἰ γὰρ ὅλως ἀπαθής, οὐδὲν νοήσει... ἀπαθής γὰρ ὁ νοῦς, εἰ μὴ ἄρα ἄλλως παθητικός... οὐχ ὥς τὸ κινητικόν, ἀτελής γὰρ ἡ κίνησις, ἀλλ' ὥς ἐνέργεια. ταῦτα δὲ διαφέρει. χρῆσθαι δὲ ἀναγκαῖον ἐνίστε τοῖς αὐτοῖς ὀνόμασιν.

Prisc. 28, 16 sq., 20 sq. (= Them. 108, 15 sq.), Prisc. 28, 21—23.

Cf. Prisc. 28, 16 εἰ γὰρ... ἀπαθής, φησὶν, οὐδὲν νοήσει, τὴν ἀπὸ τῶν νοητῶν τελείωσιν πάθος καλῶν, ἐπεὶ πάντῃ καθαρεύειν τὸν νοῦν ἀνάγκη. ἐπεὶ δὲ καὶ ἀπὸ τῶν νοητῶν κατ' οἰκείαν τελειοῦται ἐνέργειαν, διὰ τοῦτο κοινότερον ἀλλ' οὐ κυρίως ἂν τοῦ πάθους ἐκείνου ἀκούοιμεν· ἀπαθὲς γὰρ ὁ νοῦς, φησὶν ὁ Θεόφραστος, εἰ μὴ ἄρα... ὀνόμασιν: Them. 108, 14 λέγουσι δὲ καὶ αὐτὸν ἀπαθὴ καὶ χωριστόν, ὥσπερ τὸν ποιητικὸν καὶ τὸν ἐνεργείᾳ· ἀπαθής γὰρ, φησὶν, ὁ νοῦς... παθητικός, καὶ ὅτι τὸ παθητικὸν ἐπ' αὐτοῦ οὐχ ὥς τὸ κινητὸν ληπτέον (ἀτελής γὰρ ἡ κίνησις), ἀλλ' ὥς ἐνέργειαν.

5. καὶ πῶς νοητὸν ὑπὸ νοητοῦ πάσχει;... καὶ πῶς αὐτὸς ἑαυτὸν τελειοῖ;... καὶ διὰ τί οὐκ αἰεῖ;

Prisc. 28, 29, 31; 29, 1.

Prisc. 28, 29 (post lacunam) καὶ πῶς...πάσχει; ἐπειδὴ ὡς νοητὸν δεύτερον, τουτέστιν ὡς ἐνεργητικὸν καὶ ὡς ἄρχον καὶ αὐτενεργήτως ὀριζόμενον ὑπὸ τοῦ κρείττονος. καὶ πῶς...τελειοῖ; διότι, ὡς εἴρηται, καὶ τὰ ἀπὸ τοῦ κρείττονος αὐτενεργήτως δέχεται. καὶ...αἰεῖ; ἢ ὁ μὲν νοῦς αἰεὶ ἐνεργεῖ, ἢ δὲ ψυχὴ οὐκ αἰεὶ χρήται καὶ παρόντι τῷ νῷ ἐν τῇ πρὸς τὰ σώματα στροφῇ. εἰκόασι δὲ οἱ ἄνδρες οὗτοι, καὶ ὁ Ἀριστοτέλης καὶ ὁ Θεόφραστος, ὅπου καὶ ἤδη ἔφαμεν, νοῦν ἐνίοτε καὶ πᾶσαν τὴν λογικὴν προσαγορεύειν ζῶν, ὅπου γε καὶ μέχρι φαντασίας τὸ τοῦ νοῦ διατείνουσιν ὄνομα.

6. ἐπεὶ τὸ ὅφ' ἐτέρου κινουντος τὴν ἐνέργειαν εἶναι τοῦ νοῦ καὶ ἄλλως ἄτοπον, καὶ πρότερόν τι ποιεῖν ἐστὶν ἕτερον τοῦ νοῦ, καὶ οὐκ ἐφ' ἑαυτῷ τὸ νοεῖν, εἰ μή τις ἄλλος ὁ κινῶν νοῦς.

Prisc. 29, 12—15.

Prisc. 29, 11 τελεοῦται δὲ καὶ ἡ ψυχὴ ἀφ' ἑαυτῆς τε ἀρχομένη καὶ ἑαυτὴν προσάγουσα τῷ νῷ, καὶ αὐτενεργήτως καὶ τὴν ἀπ' ἐκείνου δεχομένη τελειώσιν· ἐπεὶ, φησί, τὸ ὅφ' ἐτέρου...ὁ κινῶν νοῦς. καὶ ταῦτα ἀληθῆ εἶτε τὴν μετεχομένην ὑπὸ ψυχῆς ἀμέριστον οὐσίαν καλοῖη νοῦν, εἶτε αὐτὴν τὴν λογικὴν ψυχὴν.

7. εἰ γὰρ ἐνεργῶν γίνεται τὰ πράγματα, τότε δὲ μάλιστα ἐκάτερόν ἐστι, τὰ πράγματα ἂν εἴη ὁ νοῦς...ἄρα οὖν, ὅταν μὴ νοῇ, μὴ ἂν τὰ πράγματα οὐδὲ νοῦς ἐστίν;...ἄρα οὖν οὐδὲν ἐστι πρὶν νοεῖν;...καὶ γὰρ ἄτοπον εἰ δυνάμει μὲν ὦν μηδὲν ἐστίν, ἐνεργείᾳ δὲ ἕτερος ὅταν μὴ ἑαυτὸν νοῇ, τῷ δὲ ἄλλο καὶ ἄλλο νοεῖν οὐδέποτε ὁ αὐτός. ἄκριτος γὰρ τις αὕτη γε καὶ ἄτακτος ἢ φύσις...οὐχ οὕτω ληπτέον...αὕτη μὲν γὰρ [int. ἡ αἰσθησις] οὐκ ἄνευ σώματος, ὁ δὲ χωριστός.

Prisc. 29, 18—20, 22 sq., 26; 30, 22—25, 29; 31, 1 sq.

Cf. Prisc. 30, 19 κἂν οὖν μὴ πάντα ἅμα, ἄλλοτε δὲ ἄλλα γινώσκῃ, οὐ διὰ τοῦτο καὶ ἔστιν ἄλλοτε ἄλλα καὶ οὐδέποτε τὰ αὐτά, διότι οὐ πάντῃ μεταβάλλεται, ἀλλ' ἔστι τι καὶ τὸ μένον ἐπὶ τῆς ψυχῆς, καθὰ αἰεὶ ἔστηκεν ἐν αὐτῇ τὰ πράγματα. καὶ γὰρ ἄτοπον, φησὶν, εἰ...ἡ φύσις—ἄριστα ἐλέγχων τοὺς δυνάμει πάντα καὶ μηδὲν εἶναι καθ' αὐτὸν <τὸν> νοῦν ὑποτιθεμένους. πρῶτον μὲν γὰρ ὅταν μὴ νοῇ οὐδὲν ἔσται· ἔπειτα δὲ καὶ νοῶν, ὅταν ἄλλα καὶ μὴ ἑαυτὸν νοῇ, ἕτερόν τι ἔσται καὶ οὐκ αὐτός, καὶ ἄλλοτε ἄλλος καὶ αἰεὶ μεταβαλλόμενος. διὸ φησιν, οὐχ οὕτω ληπτέον, ἀλλ' ὡς ἐλέχθη πρότερον ἐν οἷς ἡξίου κατὰ ἀναλογίαν ἀκούειν τὸ δυνάμει καὶ ἐνεργείᾳ, καὶ μὴ ὡς ἐπὶ τῆς ὕλης οὕτω καὶ ἐπὶ τοῦ νοῦ· τόδε γάρ τι εἶναι τὸν νοῦν· μηδὲ μὴν ὡς ἐπὶ τῆς αἰσθήσεως· αὕτη μὲν γάρ, ὡς καὶ νῦν ἐπάγει, οὐκ ἄνευ...χωριστός: Them. 108, 17 καὶ προῖον φησι τὰς μὲν αἰσθήσεις οὐκ ἄνευ σώματος, τὸν δὲ νοῦν χωριστόν. Cf. *De A.* 429 b 4 sq.

8. ὅταν γὰρ οὕτως ἕκαστα γένηται ὡς ἐπιστήμων κατ' ἐνέργειαν λέγεται, τοῦτο δὲ συμβαίνειν φαμέν ὅταν δύνηται δι' ἑαυτοῦ ἐνεργεῖν, ἔστι μὲν οὖν καὶ τότε δυνάμει πως, οὐ μὴν ὁμοίως καὶ πρὶν μαθεῖν καὶ εὐρεῖν. ὑπὸ τίνος οὖν ἡ γένεσις καὶ πῶς, εἴτ' οὖν ἕξεως καὶ δυνάμεως εἶτε οὐσίας; ἔοικε δὲ μᾶλλον ἕξεως, αὕτη δὲ οἷον τελεοῦν τὴν φύσιν.

Prisc. 31, 8—13.

Prisc. 31, 5 καὶ ἐπειδὴ συμφυῆς ἐστὶ τοῖς ἐπιστητοῖς, ὅταν ὁτιοῦν ἐπίσθηται, ἐνεργεῖα οὕσα ὅπερ τὸ ἐπιστητὸν οὐχ ἑτέρα ἐστὶν ἑαυτῆς, διότι αὕτη κατὰ τὰ ἐπιστητὰ πάντα οὐσίωται· ἀλλὰ δὴ φαίνεται καὶ γινομένη πως. ὅταν γὰρ...τὴν φύσιν. Cf. *De A.* 429 b 5—9.

9. πῶς ἑκάτερα [int. θεωρεῖ ὁ δυνάμει νοῦς];...πῶς τὰ ἐν ὕλῃ καὶ ἀφαιρέσει...ἄρα οὖν ἑτέρω ἢ ἑτέρως ἔχοντι κρίνει...ἢ τῷ αὐτῷ καὶ ὡσαύτως ἔχοντι;...ὅλως δὲ ὡς χωριστὰ τὰ πράγματα τῆς ὕλης, οὕτω καὶ τὰ περὶ τὸν νοῦν.

Prisc. 32, 31 sq.; 33, 25, 26 sq., 32 sq.

Prisc. 32, 30 ἐπειδὴ ἀμφοτέρων [int. τῶν αὐλῶν εἰδῶν καὶ τῶν ἐνύλων εἰδῶν] θεωρητικὸς ὁ δυνάμει νοῦς, ζητεῖ, πῶς ἑκάτερα, καὶ πῶς τὰ...ἀφαιρέσει· καὶ γὰρ αὐτὰ τὰ ἐνυλὰ ἢ κατὰ τὸ συναμφοτέρον ἢ κατὰ μόνον θεωρεῖ τὸ εἶδος, 33, 25 ἄρα οὖν...κρίνει τὰ τε αὐλὰ καὶ τὰ ἐνυλὰ, καὶ τὰ ἐν ὕλῃ αὐ καὶ τὰ ἐξ ἀφαιρέσεως, ἢ τῷ αὐτῷ...ἔχοντι, 33, 32 ὅλως δὲ...τὸν νοῦν ἀμφοτέροι ἀποφαίνονται ὅ τε Ἀριστοτέλης καὶ Θεόφραστος. Cf. *De A.* 429 b 18—22.

10. αὐτὸ τὸ εἶναι τὰ πράγματα τὸν νοῦν καὶ δυνάμει καὶ ἐνεργείᾳ ληπτέον οἰκείως...δυνάμει μὲν τὰ νοητὰ ὁ δυνάμει νοῦς...ἐντελεχείᾳ δὲ οὐδὲν πρὶν νοεῖν.

Prisc. 34, 29—31; 35, 29 sq., 32 sq.

Prisc. 34, 29 πάλιν δὲ ὑπομνήσκει φιλοσοφώτατα ὁ Θεόφραστος ὡς καὶ αὐτὸ τὸ εἶναι...οἰκείως, ἵνα μὴ ὡς ἐπὶ ὕλης κατὰ στέρην τὸ δυνάμει, ἢ κατὰ τὴν ἔξωθεν καὶ παθητικὴν τελείωσιν τὸ ἐνεργεῖα ὑπονοήσωμεν, ἀλλὰ μὴδὲ ὡς ἐπὶ αἰσθήσεως, ἐνθα διὰ τῆς τῶν αἰσθητηρίων κινήσεως ἢ τῶν λόγων γίνεται προβολή, καὶ αὕτη τῶν ἔξω κειμένων οὕσα θεωρητικὴ· ἀλλὰ νοερώς ἐπὶ νοῦ καὶ τὸ δυνάμει καὶ τὸ ἐνεργείᾳ εἶναι τὰ πράγματα ληπτέον, 35, 24 καὶ μοι δοκεῖ ἐπιστημῆνασθαι κἀνταῦθα τὸ δεῖν οἰκείως λαμβάνειν ὑπιδόμενος τὸ ἄγραφον γραμματεῖον, ἐνταῦθ' αὖ ποῦ ὑπὸ τοῦ Ἀριστοτέλους ὡς παρὰ δέξιμα τοῦ δυνάμει νοῦ προφερόμενον, ἵνα καὶ τὸ ἄγραφον ὡς ἐν νῷ θεωρῶμεν, ἔχοντι μὲν κατ' οὐσίαν τὰ εἶδη καὶ τέλεια ἔχοντι, ὑπὸ δὲ τοῦ πρώτου νοῦ τελειομένῳ καὶ ἐντελεχείᾳ γραφομένῳ. τὸ γὰρ ἀμέριστον καὶ ἡνωμένον τῆς τελειότητος ἐκείθεν. δυνάμει μὲν...νοῦς, ὡς καθ' ὑπόβασιν μὲν καὶ μετὰ τίνος ἑτερότητας, ἀλλ' ἐγειρόμενος ἀφ' ἑαυτοῦ εἰς τὴν ἀπὸ τοῦ πρώτου νοῦ ἀμέριστον τελειότητα· τοιοῦτον γὰρ τὸ νοερὸν δυνάμει· ἐντελεχείᾳ...νοεῖν, τουτέστιν οὐκ ἀμερίστως οὐδὲ ἡνωμένως, πρὶν ὑπὸ τοῦ πρώτου τελειωθῆναι. Cf. *De A.* 429 b 29—31.

11. ἀλλ' ὅταν γένηται καὶ νοηθῇ δηλονότι ταῦτα [int. τὰ ἐνυλὰ] ἔξει [int. ὁ νοῦς], τὰ δὲ νοητὰ αἰεὶ, εἴπερ ἡ ἐπιστήμη ἢ θεωρητικὴ ταὐτὸ τοῖς πράγμασιν, αὕτη δὲ ἡ κατ' ἐνεργεῖαν δηλονότι· κυριωτάτη γάρ. τῷ νῷ τὰ μὲν νοητὰ αἰεὶ ὑπάρχει... τὰ δὲ ἐνυλὰ, ὅταν νοηθῇ, καὶ αὐτὰ τῷ νῷ ὑπάρξει.

Prisc. 37, 24—30.

Prisc. 37, 24 τοῦτο δὲ (*De A.* 430 a 7—9) διαρθρῶν ὁ Θεόφραστος ἐπάγει· ἀλλ' ὅταν...τῷ νῷ, φησί, τὰ μὲν νοητὰ, τουτέστι τὰ αὐλὰ, αἰεὶ ὑπάρχει, ἐπειδὴ κατ' οὐσίαν αὐτοῖς σύνεστι καὶ ἔστιν ὅπερ τὰ νοητὰ· τὰ δὲ ἐνυλὰ...ὑπάρξει, οὐχ ὡς συστοίχως

αὐτῷ νοηθησόμενα· οὐδέποτε γὰρ τὰ ἔνυλα τῷ νῷ αὐλῶ ὄντι· ἀλλ' ὅταν ὁ νοῦς τὰ ἐν αὐτῷ μὴ ὡς αὐτὰ μόνον ἀλλὰ καὶ ὡς αἴτια τῶν ἐνύλων γινώσκη, τότε καὶ τῷ νῷ ὑπάρξει τὰ ἔνυλα κατὰ τὴν αἰτίαν. Cf. *De A.* 430a 3—9.

12. ἐκεῖνο ἐπισκεπτέον, ὃ δὴ φαμεν ἐν πάσῃ φύσει τὸ μὲν ὡς ὕλην καὶ δυνάμει, τὸ δὲ αἴτιον καὶ ποιητικόν...τίνε οὖν αἰτῶν αἱ δύο φύσεις; καὶ τί πάλιν τὸ ὑποκείμενον ἢ συνηρημένον τῷ ποιητικῷ; μεικτὸν γὰρ πῶς ὁ νοῦς ἔκ τε τοῦ ποιητικοῦ καὶ τοῦ δυνάμει. εἰ μὲν οὖν σύμφυτος ὁ κινῶν, καὶ εὐθὺς ἐχρῆν καὶ αἰεῖ· εἰ δὲ ὕστερον, μετὰ τίνος καὶ πῶς ἢ γένεσις; ἔοικε δ' οὖν ὡς ἀγέννητος, εἴπερ καὶ ἄφθαρτος. ἐνυπάρχων δ' οὖν διὰ τί οὐκ αἰεῖ; ἢ διὰ τί λήθη καὶ ἀπάτη καὶ ψεῦδος; ἢ διὰ τὴν μεῖξιν.

Them. 108, 19—21, 22—28.

Them. 108, 18 ἀψάμενος δὲ καὶ τῶν περὶ τοῦ ποιητικοῦ νοῦ διωρισμένων Ἀριστοτέλει ἐκεῖνό φησιν ἐπισκεπτέον...ποιητικόν, καὶ ὅτι αἰετμιώτερον τὸ ποιοῦν τοῦ πάσχοντος, καὶ ἡ ἀρχὴ τῆς ὕλης. ταῦτα μὲν ἀποδέχεται, διαπορεῖ δέ· τίνε οὖν... διὰ τὴν μεῖξιν. (Frag. LIII. b W, p. 227, 14—228, 4.)

13. αἱ μὲν ὀρέξεις καὶ ἐπιθυμίαι καὶ ὄργανα σωματικὰ κινήσεις εἰσὶ καὶ ἀπὸ τούτου τὴν ἀρχὴν ἔχουσιν, ὅσαι δὲ κρίσεις καὶ θεωρίαι, ταύτας οὐκ ἔστιν εἰς ἕτερον ἀναγαγεῖν, ἀλλ' ἐν αὐτῇ τῇ ψυχῇ καὶ ἡ ἀρχὴ καὶ ἡ ἐνέργεια καὶ τὸ τέλος, εἴ γε δὴ καὶ ὁ νοῦς κρεῖττόν τι καὶ θεϊότερον, ἅτε δὴ ἔξωθεν ἐπεισιῶν καὶ παντέλειος...ὑπὲρ μὲν οὖν τούτων σκεπτέον, εἴ τινα χωρισμὸν ἔχει πρὸς τὸν ὄρον, ἐπεὶ τό γε κινήσεις εἶναι καὶ ταύτας ὁμολογούμενον.

Simpl. *in Phys.* 964, 31—965, 4; 965, 5 sq., Fr. LIII. W.

Simpl. *in Phys.* 964, 29 ταῦτα δὲ καὶ τὸν κορυφαῖον ἀρέσκει τῶν Ἀριστοτέλους ἐταίρων τὸν Θεόφραστον ἐν τῷ πρώτῳ τῶν Περὶ κινήσεως αὐτοῦ λόγοντα, ὅτι αἱ μὲν ὀρέξεις...καὶ παντέλειος. καὶ τούτοις ἐπάγει ὑπὲρ μὲν οὖν...ὁμολογούμενον.

In these excerpts I see nothing to justify the supposition that Theophrastus modified the conclusions of our treatise. The last, no. 13, tallies exactly with the position provisionally assumed in *De A.* I, c. 4: whereas Theophrastus speaks of κρίσεις and θεωρίαι as admittedly κινήσεις, A. himself not only says 408 b 3 sq. that, amongst other mental acts and conditions, διανοεῖσθαι is thought to be κίνησις, but also approves of saying that the man thinks with his soul, 408 b 14 sq. Again, the last words of no. 4 are obviously inspired by 418 a 2 sq. χρῆσθαι ἀναγκαῖον...ὡς κυρίοις ὀνόμασιν. I take it, then, that the object of Theophrastus is to confirm the



conclusions of our treatise and that his method, which Themistius found so perplexing, is to do this indirectly by thinking out the only possible alternatives, which A. sometimes left unexpressed, and showing exactly what difficulties beset our path if we take the one or the other of two conflicting views. The conclusion enunciated in no. 2, if we may trust its setting by Priscian, would seem to be that to which the cogent reasoning of no. 7 must lead. In no. 6 he seems to be arguing that the doctrine of intellect as capacity or potentiality is incomplete unless we assume that τὸ κινῶν is ἄλλος νοῦς. Both here and in no. 7 he may have in view and be leading up to the position that intellect thinks itself (cf. 430 a 2 καὶ αὐτὸς δὲ νοητός ἐστιν ὥσπερ τὰ νοητά): or he may be preparing the way for the twofold nature of intellect with which no. 12 deals. On this last important problem he gives no uncertain sound. Intellect, presumably the human intellect, is in a manner composite, μεικτόν πως: cf. the last words διὰ τὴν μείξιν. One of the two elements, viz. that which serves as substratum or correlate to the other, the active element, he identifies with the capacity or potentiality of thinking, ὁ δυνάμει νοῦς. As to that which is the agent, ὁ κινῶν, it must be both ἀγέννητος and ἄφθαρτος. But we have our choice of alternatives: either we may assume it to be connatural with the man, σύμφυτος, in which case it must have been active from the moment of birth and uninterruptedly; or we may suppose it to be a later growth, and then we must perforce explain how it springs up in him and what brings it there. (This dilemma recalls *Anal. Post.* II. 19, 99 b 25 καὶ πότερον οὐκ ἐνούσαι αἱ ἔξεις ἐγγίνονται ἢ ἐνούσαι λελήθασιν κτέ.) Why, then, do we not always think, and whence come forgetfulness, mistake and falsehood in our thought? Theophrastus answers, because the two elements are in the human mind intermingled: and just at this interesting point the citation breaks off, leaving the impression that Theophrastus had no more to say on 430 a 23—25. But from the first excerpt it is clear that on the origin of intellect as a whole he accepted the conclusions of *De Gen. An.* II., c. 3.

There is one other matter of minor importance, which relates to the setting provided by Priscian for excerpt no. 10. I should infer from the expression (35, 24) καὶ μοι δοκεῖ ἐπισημήνασθαι κἀνταῦθα τὸ δεῖν οἰκέως λαμβάνειν ὑπιδόμενος τὸ ἀγραφον γραμματεῖον that Theophrastus had not himself, or at any rate in that context, mentioned the simile of the unwritten tablet at all. It is Priscian who puts this gloss upon the scrap which he here cites as δεῖν οἰκέως λαμβάνειν, but 34, 30 sq. as ληπτέον οἰκέως. It would seem incon-

ceivable that Theophrastus should here be citing *De A.* 429 b 31, where our MSS. have *δεῖ δ' οὕτως*. The likeness to 26, 2 *οὐχ οὕτω δὲ ληπτέον* and 26, 5 *κατὰ ἀναλογίαν οὖν...ληπτέον* is too strong to permit us to consider the one a comment upon Aristotle and the other a citation from him. Priscian in his own interpretation of the simile follows the path of Neo-Platonic orthodoxy. Whereas Alexander had brought the tablet into connexion with 429 a 27 sq., "the place of forms," the Neo-Platonists preferred to interpret it by 430 a 15 sqq., making the unwritten tablet answer to the colours, which need the sunlight to bring them into actuality. See Prisc. Lyd. 26, 21 *τοῦ ἐνεργείᾳ τελεούντος δέεται νοῦ, καὶ...καταλάμψεως* and 26, 29—27, 7, where the idea is fully developed without any fresh voucher from Theophrastus for such an interpretation. In the words (27, 5) *μὴ δεῖν οὕτω λαμβάνειν παρακελεύεται, ζητεῖν δὲ κτέ.* it is a mere coincidence that *οὕτω* should follow *δεῖν*, and we have here only another adaptation of *οὐχ οὕτω ληπτέον*. I conclude, then, that there is no evidence to be got from Priscian as to the genuine reading in 429 b 31.

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αἰσθησις: πάθος τῆς ψυχῆς 9 b 16; one of the modes of life 13 a 23; ἀλλοίως τις εἶναι δοκεῖ 15 b 24; ἐν τῷ κινεῖσθαι τε καὶ πάσχειν συμβαίνει 16 b 33; διχῶς ἀν λέγοιτο ἡ αἰσθησις, ἡ μὲν ὡς δυνάμει, ἡ δὲ ὡς ἐνεργείᾳ 17 a 12, 26 a 23, ἡ δυνάμεις ἡ ἐνέργεια 28 a 6 (cf. 28 b 13, 29 a 2); τῶν καθ' ἑκάστων ἡ κατ' ἐνέργειαν αἰσθησις as distinguished from ἐπιστήμη 17 b 22; ἡ αἰσθησις οἷον μεσότης ἐστὶ τῆς ἐν τοῖς αἰσθητοῖς ἐναντιώσεως 24 a 4; ὁ λόγος 24 a 31, 26 b 3, 7; οὐ μέγεθος ἀλλὰ λόγος τις καὶ δυνάμεις τοῦ αἰσθητηρίου 24 a 27; οὐ δύναται αἰσθάνεσθαι ἐκ τοῦ σφόδρα αἰσθητοῦ 29 a 31 sq.; κρίνει τὰ αἰσθητὰ 24 a 5, δυνάμεις καθ' ἣν κρίνομεν καὶ ἀληθεύομεν ἡ ψευδόμεθα 28 a 4, τὸ κριτικὸν διανοίας ἔργον καὶ αἰσθήσεως 32 a 16 (cf. 4 b 26); τὸ δεκτικὸν τῶν αἰσθητῶν εἰδὼν ἀνευ τῆς ὕλης 24 a 18, τὸ πάσχειν τὰ εἶδη τῶν αἰσθητῶν 27 a 9; τὰ αἰσθητὰ πως 31 b 23; τέμνεται εἰς τὰ πράγματα, ἡ μὲν δυνάμει εἰς τὰ δυνάμει κτέ. 31 b 24; εἶδος αἰσθητῶν 32 a 2; ἀπὸ τῶν διὰ as distinguished from ἀνάμνησις 8 b 17; πότερον πάντων ὁμοίως ἐστὶν 23 b 1 sq.; ἀπελθόντων τῶν αἰσθητῶν ἐνεῖσιν αἱ αἰσθήσεις ἐν τοῖς αἰσθητηρίοις 25 b 24 sq.; ἡ τοῦ αἰσθητοῦ ἐνέργεια καὶ τῆς αἰσθήσεως ἡ αὐτῆς ἐστὶ καὶ μία 25 b 26; αἰσθίσει αἰσθανόμεθα ὅτι διαφέρει τὰ καθ' ἑκάστην αἰσθησιν αἰσθητὰ 26 b 14; αἰσθησιν ἀνευ τῆς ἐν τοῖς φυτοῖς ἀρχῆς οὐθὲν ἔχει 11 b 30; οὐκ ἀναγκαῖον αἰσθησιν ὑπάρχειν ἐν ἅσασιν τοῖς ζῶσιν 34 a 27; τὰ φυτὰ οὐ μετέχει αἰσθήσεως 10 b 23, 35 b 1; τὸ ζῶον ὑπάρχει διὰ τὴν αἰσθησιν πρώτως 13 b 2 (cf. 28 a 8, 34 a 30); οὐθὲν ἔχει ψυχὴν σπουδὴ μὴ μόνιμον ὃν ἀνευ αἰσθήσεως 34 b 8; ὅπου αἰσθησις, καὶ λῦσι καὶ ἥδονῃ 13 b 23, 14 b 4 (cf. 34 a 3); ἐκότερον τῶν μορίων τῶν διαιρουμένων ζῶον αἰσθησιν ἔχει 11 b 21 (cf. 13 b 21)—τὰ μὲν ζῶα ἔχει πάσας αἰσθήσεις, τὰ δὲ τινάς, τὰ δὲ μίαν, τὴν ἀφῆν 14 a 2 sq., b 3; τίνος ἔνεκα πλείους ἔχομεν αἰσθήσεις 25 b 4; οὐκ ἐστὶν αἰσθησις ἑτέρα παρὰ τὰς πέντε 24 b 22—ἡ αἰσθησις ἐκάστων ἐστὶν οὐχ ἡ ἐκάστων λέγεται, ἀλλ' ἡ τοιοῦτὴ 24 a 22 sq.; ἐκάστη αἰσθησις τοῦ ὑποκειμένου αἰσθητοῦ ἐστίν, ὑπάρχουσα ἐν τῷ αἰσθητηρίῳ 26 b 8, κρίνει τὰς τοῦ ὑποκειμένου αἰσθητοῦ διαφορὰς 26 b 10, ἐν αἰσθάνεται 25 a 20; πᾶσα αἰσθησις μίᾳς ἐναντιώσεως εἶναι δοκεῖ (πλὴν ἀφῆς) 22 b 23, 25 (cf. 18 a 13)—τῶν κοινῶν ἔχομεν αἰσθησιν κοινὴν 25 a 27, ἐκάστη αἰσθίσει αἰσθανόμεθα κατὰ συμβεβηκὸς 25 a 13; τὰ δ' ἀλλήλων ἴδια κατὰ συμβεβηκὸς αἰσθάνονται αἱ αἰσθήσεις, οὐχ ἡ αὐτὰ, ἀλλ' ἡ μία 25 a 30 sq.; ἡ αἰσθησις τῶν ἰδίων ἀεὶ ἀληθής 27 b 12, 28 a 11, ἡ οὐκ ὀλίγιστον ἔχουσα τὸ ψεύδος 28 b 19 (cf. 18 a 12, 30 b 29), περὶ τὰ κοινὰ καὶ τὰ συμβεβηκότα μάλιστα ἐστὶν ἀπατηθῆναι κατὰ τὴν αἰσθησιν 28 b 25, 20, 18 a 15 sq.; διὰ τὴν τῶν αἰσθήσεων (=sense-organs) αὐτῶν οὐ γίνεται αἰσθησις 17 a 3; αἱ ἄλλαι

αἰσθησις (πλὴν ἀφῆς) δι' ἑτέραν αἰσθάνονται 34 b 14, οὐ τοῦ εἶναι ἔνεκα, ἀλλὰ τοῦ εἶ 35 b 19 sq., 34 b 24; ἡ δὴ αἰσθησις 12 b 24, πᾶσα αἰσθησις 16 b 32, 24 a 17—(Platonic) αἰσθησις ὁ τοῦ στερεοῦ ἀριθμὸς 4 b 23, αἰσθησις σύμφυτος ἀρμονίας 6 b 30. αἰσθητηρίον: τὸ αἰσθητηρίον δεκτικὸν τοῦ αἰσθητοῦ ἀνευ τῆς ὕλης 25 b 23; αἰσθητηρίον πρῶτον ἐν τῷ αἰσθητικῇ δυνάμει 24 a 24; ὑπὸ τοῦ μεταξὺ κινεῖται ἐκότερον τῶν αἰσθητηρίων 19 a 28 (cf. 19 a 14 sq.), πάντα τὰ αἰσθητήρια (πλὴν ἀφῆς) ἀφῆ αἰσθάνεται, ἀλλὰ δι' ἑτέρον 35 a 18, 15 sq.; ἐπ' αὐτῷ τιθέμενον τῷ αἰσθητηρίῳ ἀνασθητόν 21 b 17, 23 b 20 sq., b 24 sq. (cf. 19 a 12, 26, 28); τῶν αἰσθητῶν αἱ ὑπερβολαὶ φθείρουσι τὰ αἰσθητήρια 24 a 29 sq., 35 b 15, b 7 sq., b 18; ἀνάγκη εἶπερ ἐκλείπει τις αἰσθησις καὶ αἰσθητήριον τι ἐκλείπει 24 b 26 sq.; εἰ ἐξ ἀέρος ἐστὶ τὸ αἰσθητήριον 24 b 33, τῶν ἀπλῶν ἐκ δύο σούτων αἰσθητήρια μόνον ἐστίν, ἐξ ἀέρος καὶ ὕδατος 25 a 3 sq., οὐθὲν ἐστὶν αἰσθητήριον ἕξ ὕδατος καὶ ἀέρος 25 a 8, τὰ ἄλλα ἕξ γῆς αἰσθητήρια ἂν γένοιντο 35 a 14 sq.: τὸ ὁσφραντικὸν αἰσθητήριον οὐκ ἐστὶν ἀκριβές 21 a 12, τοῖς ἀνθρώποις διαφέρει πρὸς τὸ τῶν ἄλλων ζῶων 21 b 26 sq. (cf. 21 b 32 sq.), δυνάμει ξηρόν 22 a 7; φανερά τὰ αἰσθητήρια τῆς ὀψως, τῆς ἀκοῆς, τῆς ὁσφρήσεως ἑτέρα ὄντα 23 a 11; τὸ γευστικὸν αἰσθητήριον ἀνάγκη μῆτε ὕγρον εἶναι ἐντελεχεῖα μῆτε ἀδύνατον ὑγραίνεσθαι 22 b 15 sq., b 4 sq.: παρὰ τὸ ἀπτικὸν αἰσθητήριον εἶναι ἀνθρωποὶ εὐφυνεῖς καὶ ἀφυνεῖς 21 a 23 sq.; τὸ αἰσθητήριον τὸ τοῦ ἀπτικοῦ 22 b 20; τὸ πρῶτον αἰσθητήριον τοῦ ἀπτικοῦ 22 b 22; πότερον ἐστὶν ἐντὸς 22 b 34; τὸ αἰσθητήριον τὸ ἀπτικὸν ἐν τῷ ἡ ἀφῆ πρώτῳ δυνάμει θερμὸν κτέ. 23 b 30; τὸ ἀπτικὸν αἰσθητήριον δεκτικὸν οὐ μόνον ὅσαι διαφοραὶ γῆς εἰσίν, ἀλλὰ καὶ τῶν ἄλλων ἀπτῶν ἀπάντων 35 a 22 sq.; τὸ ἀπτικὸν αἰσθητήριον οὐκ ἐστὶν οὔτε γῆς οὔτε ἄλλου τῶν στοιχείων οὐδενὸς 35 b 2 sq.: τῶν κοινῶν οὐχ οἶδον τ' εἶναι αἰσθητήριον ἰδίων 25 a 14; τὸ ἔσχατον αἰσθητήριον 26 b 16 (cf. 31 a 19). In 44 b 31—425 a 8 the word is apparently used in a restricted sense for the organs of telepathic senses only.

αἰσθητικός: predicative 24 b 33, 27 a 15, 34 b 28, οὐθὲν ἀνευ θερμοτήτος αἰσθητικὸν 25 a 6; αἰσθητικῶς εἶναι 13 b 29, 24 a 27—τὸ αἰσθητικόν, part of the soul 10 b 26 (cf. 8 a 13, 14 a 32, b 1, 31, 15 a 2, 17, 31 a 14, b 26, 33 b 3); οὔτε λόγον οὔτε λόγον ἔχον 32 a 30; corresponding to νοῦς 2 b 13, 10 b 22, 29 a 17; τὸ αἰσθητικὸν οὐκ ἐστὶν ἐνεργεῖα ἀλλὰ δυνάμει μόνον 17 a 6 (cf. 17 b 30—18 a 1), δυνάμει ἐστὶν οἷον τὸ αἰσθητὸν ἥδη ἐντελεχεῖα 18 a 3 sq. (cf. 31 a 4 sq.), τῆς ψυχῆς τὸ αἰσθητικὸν δυνάμει τὸ αἰσθητὸν 31 b 26—28; τοῦ αἰσθητικοῦ ἡ πρώτη μεταβολὴ γίνεται ὑπὸ τοῦ γεννηάντος 17 b 16; ἡ τοῦ αἰσθητικοῦ ἐνέργεια ἐν τῷ αἰσθητικῷ 26 a 11; μία ἐστὶν ἡ ἐνέργεια ἡ τοῦ αἰσθητοῦ καὶ ἡ τοῦ

- αἰσθητικοῦ 26 a 15 sq.; οὐ τὸ κινεῖν τὸ ζῆον τὴν πορευτικὴν κίνησιν 32 b 19; τῷ αἰσθητικῷ τὸ θερμὸν καὶ τὸ ψυχρὸν κρίνει 29 b 15; οὐχ ὁμοία ἡ ἀπάθεια τοῦ αἰσθητικοῦ καὶ τοῦ νοητικοῦ 29 a 29 sq.; τὸ αἰσθητικὸν οὐκ ἄνευ σώματος 29 b 5; τῷ αἰσθητικῷ ὄργανον ἔστιν 29 a 26; τὸ τοῦ ἀπτοῦ αἰσθητικὸν (=sense-organ) 23 b 23; αἰσθητικὴ ψυχὴ 7 a 5, ἀρχὴ 11 b 30, μεσότης 31 a 11, ἡφον 15 a 6 (cf. 24 b 9), σῶμα 12 b 25.
- αἰσθητός: τὸ ἀντικείμενον τοῦ αἰσθητικοῦ 2 b 16, 15 a 22 (cf. 29 a 17): τὰ αἰσθητὰ distinguished from τὰ νοητὰ 31 b 22; τῶν καθ' ἑκάστα καὶ τῶν ἑξωθεν 17 b 27 sq., 21; λέγεται τριχῶς 18 a 8; τῶν καθ' αὐτὰ αἰσθητῶν τὰ ἴδια κυρίως ἐστὶν αἰσθητὰ 18 a 25; κατὰ συμβεβηκὸς αἰσθητὸν 18 a 20; ἀναγκαῖον ὑπάρχειν τοῦ αἰσθητὸν 17 b 25; κὰν ταῖς ἐπιστήμας τῶν αἰσθητῶν, 17 b 26; ἐν ἑτέρῳ αἰσθητῷ τὰ κοινὰ ὑπάρχει 25 b 9; φαίνεται τὸ αἰσθητὸν ἐκ δυναμει ὄντος τοῦ αἰσθητικοῦ ἐνεργείᾳ ποιοῦν 31 a 4 sq.: διχῶς 26 a 23—22 a 9, 24 a 29, b 2, 18, 31, 25 b 24, 26, 26 a 11, 16, b 8, 10, 32 a 3, 4, 5, 6, 35 b 7, 15.
- αἴτημα 18 b 26.
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- ἀκίνητος 20 a 10, 32 b 20, 33 b 15, 16.
- ἀκηχὶ 11 a 30, 32 b 24, 34 a 24.
- ἀκοή: sense of hearing (see II., c. 8) ψόφου 18 a 13, τοῦ ἀκουστοῦ καὶ ἀνηκούστου 21 b 4 sq., ψόφου τε καὶ σιγῆς 22 a 23, δέξος καὶ βαρέος 22 b 24 sq.; δι' ἐτέρου αἰσθάνεται 34 b 15; τὸ ζῶον ἔχει ἀκοὴν ὅπως σημαίνειται τι αὐτῷ 35 b 24; διττὸν ἡ ἀκοή 26 a 7 sq.; ἡ κατ' ἐνέργειαν 25 b 28, 31, 26 a 3, 18, ἡ τοῦ ἀκουστικοῦ ἐνέργεια 26 a 7; ἡ φωνὴ καὶ ἡ ἀκοὴ ἐστὶν ὡς ἐν ἐστὶ 26 a 27 sq.; λόγος 26 a 29: 19 b 4, 21 b 4, 22 b 33, 23 a 9, 24 b 23, 25 b 28—the ear (=sense-organ) ἄερος 25 a 4; τὸ δὲν καὶ τὸ βαρὺ ὑπερβάλλον φθείρει τὴν ἀκοὴν 26 a 30 sq.: 19 b 8, 20 a 4 (δὲς), 23 b 18, 31 a 18.
- ἀκολουθεῖν 5 b 27, 25 b 5, 8, 28 a 22, 33 a 8, 11.
- ἀκούειν: τὸ δυνάμει ἀκοῦν 17 a 10, τὸ δυνάμει ἀκοῦειν 25 b 30; ἀκούεται ἐν ἑαίρῃ καὶ ὕδατι 19 b 18, 20 a 11 (cf. 19 b 34, 35, 20 a 18)—17 a 11, 20 a 5, 14, 15, 25 b 12, 29.
- ἀκουσις 26 a 1, 7, 12.
- ἀκουστικός 26 a 7.
- ἀκουστός 17 b 21, 21 b 4, 22 a 24 (δὲς).
- ἀκρασία 34 a 14.
- ἀκρατής 33 a 3.
- ἀκριβεία 2 a 2.
- ἀκριβής 21 a 10, 12, 18, 20: ἀκριβῶς 19 a 16, 21, 20 a 10, 28 a 13.
- ἀκριβοῦν 21 a 22.
- ἄκρος: exterior surface 23 a 26: extremes (of sensibles) 24 a 7: terms of the syllogism μέσον καὶ ἄκρον 7 a 29.
- ἄκτις 4 a 4.
- ἀλήθεια 2 a 5, 4 a 31.
- ἀληθεύειν 27 b 21, 28 a 4, 17.
- ἀληθής: τὸ ἀληθές εἶναι τὸ φαινόμενον 4 a 28, 27 b 3; εἰπεῖν ἀληθές 6 a 32; αἰσθησις τῶν ἰδίων 27 b 12, 28 a 11, 15, b 18 (cf. 30 b 29), οὐκ ἀληθές ἀεὶ 30 b 30; κίνησις (=φαντασία) 28 b 17, 28, δόξα 27 b 10, 28 a 19, b 5, 7, ὑπόληψις 28 b 3, φάσις 30 b 27, νοῦς 30 b 28; συμποκτὴ νοημάτων ἐστὶ τὸ ἀληθές ἢ ψεῦδος 32 a 11, ἐν οἷς καὶ τὸ ψεῦδος καὶ τὸ ἀληθές 30 a 27, b 4, 31 b 10—ἀληθῶς 11 a 26.
- ἀλλάττειν τόπον 13 b 3.
- ἄλλοιός (Emped.) 27 a 25.
- ἄλλοιοῦν 17 a 31, b 6, 8, 18 a 3, 24 b 13, 31 a 5, 35 a 2.
- ἄλλοιούσις: κίνησις τις, distinguished from φора, φθίσις, αὐξησις 6 a 13, 8 b 11, 15 b 23 (cf. 35 a 1); of αἰσθησις 15 b 24, 16 b 34; δύο τρόποι ἀλλοιώσεως 17 b 14 (cf. 17 b 7).
- ἀλλότριος 18 b 6, 20 a 17, 22 a 9, 29 a 20.
- ἀλλοφρονεῖν (Homer) 4 a 30.
- ἄλλῳ ἢ ἄλλως ἔχοντι 29 b 13 (cf. 29 b 16).
- ἄλμυρος 22 a 19, b 12, 26 b 5.
- ἄλογος 32 a 26, 30, b 6; ἀλογώτατος 8 b 32: ἀλόγως 4 a 5.
- ἄμα: preposition 3 a 18, 8 a 25, 23 b 15, 32 a 8, 35 b 10: adverb, with participle 3 b 20, 23 a 2.
- ἄμαυρος 3 a 21.
- ἄμαυρωσις 6 b 20.
- ἄμβλυσ 20 b 1, 2.
- ἀμερής 2 b 1, 7 a 9, 19 (δὲς), 9 a 2.
- ἀμειγής: of νοῦς 5 a 17, 29 a 18, 30 a 18; of sensibles 26 b 4.
- ἄμφω: ὁ ἐξ ἀμφοῖν 3 b 9 (cf. συνέπλεξαν ἐξ ἀμφοῖν 4 b 29, ἀπ' ἀμφοῖν 5 a 1); τὸ ἐξ ἀμφοῖν οὐσία 14 a 16, ἐμφύχον 14 a 17; εἰ ὡς ἐξ ἀμφοῖν, καὶ ἐν τῷ χρόνῳ τῷ ἐπ' ἀμφοῖν 30 b 13 sq.
- ἀνάγειν 5 b 12.
- ἀναθυμίασις (Heraclitus) 5 a 26.
- ἀναιμος 20 b 10, 21 b 11, 20.
- ἀναιρεῖν 8 a 25, 35 b 14, 15.
- ἀναίσθητος 21 b 17.
- ἀνακάμπτειν 7 a 28, 30.
- ἀνακλᾶσθαι 19 b 29, 31, 35 a 6.
- ἀνάκλασις 19 b 16, 35 a 5.
- ἀνάλογον 12 a 25, b 3; ἀνάλογον ἔχειν 12 b 23, 20 b 1, 21 a 17; τὰ μὲν ἔχουσι τὴν ἀνάλογον ὁσμὴν καὶ χυμὸν 21 a 28; τὸ ἀνάλογον 22 b 21, 23 a 15, ἐν τῷ ἀνάλογον ἡ (v. l. καὶ) τῷ ἀριθμῷ 31 a 22.
- ἀνάμνησις 8 b 17.
- ἀνάπλεως 23 a 27.
- ἀναπνεῖν: opposed to ἐκπνεῖν 21 a 2, b 14 (δὲς); τοῦ ἀναπνεομένου ἄερος 20 b 27, 33 (cf. 20 b 17, 26)—4 a 13, 10 b 29, 11 a 1,

- 19 b 2 (*δῖς*), 21 a 5, b 18, 20, 26, 22 a 2, 4, 5.  
*ἀναπνοή*: opposed to *ἐκπνοή* 32 b 11—4 a 10, 5 b 28, 20 b 23, 25.  
*ἀναπτος* 24 a 12 (*δῖς*).  
*ἀνασπᾶν* 21 b 30.  
*ἀνατολή* 18 b 25.  
*ἀναύχενες κόρσαι* (Emped.) 30 a 29.  
*ἀνεμος* 3 b 5, 10 b 30.  
*ἀνήκουστος* 21 b 5, 22 a 26.  
*ἀνθέλλειν* 33 b 8.  
*ἀνθρώπωνος* 2 b 4.  
*ἀνθρώπος*: opposed to other animals in general or to distinct species 2 b 7, 4 b 6, 14 b 18, 33, 21 a 11, 16, 20, 23, b 26, 29 a 8, φρονιμώτατον τῶν ζῴων 21 a 22; a type of air-breathing animals 19 b 1, 21 b 14, 19, 24; an instance of τὸ σύνολον 9 b 32, 10 a 9, 11—6 a 9, 8 b 14, 17 a 23, 24, 28 a 14, 30 b 29, (Emped.) 27 a 23.  
*ἀνίστασθαι* 6 b 4.  
*ἀνομοιομερής* 11 a 21.  
*ἀνόμιος* 17 a 19, 20, 27 b 4.  
*ἀνόςφραντος* 21 b 6 (*δῖς*).  
*ἀντικείμενον*: object, especially sensible object, 2 b 15, 15 a 20, 24 a 11; thing contrasted 11 a 4, 16 a 34.  
*ἀντιλύπησις*, 3 a 30.  
*ἀντιστρέφειν* 6 a 32, 23 a 21.  
*ἀντιφράττειν* 29 a 20.  
*ἄνω*: opposed to *κάτω* 6 a 28, 13 a 28, 16 a 1, 2, 3; τὸ ἄνω σῶμα 18 b 9, 12; ἡ ἄνω 34 a 15.  
*ἀνώνυμος* 18 a 1, 27, 19 a 4, 32, 26 a 13, 14, 15.  
*ἀόρατος*: πῶς λέγεται 22 a 26—18 b 28, 21 b 5, 22 a 20, 21, 22, 24 a 11.  
*ἀόριστος* 24 b 15; ἀόριστως 34 a 4, 5.  
*ἀπάθεια* 29 a 29.  
*ἀπαθής*: τὸ ὅμοιον ὑπὸ τοῦ ὁμοίου 10 a 23, 16 a 32: of νοῦς 5 b 21, 8 b 25, 29, 29 a 15, b 23, 30 a 18, 24.  
*ἀπαιτεῖν* 8 a 18.  
*ἀπαγνᾶν* 21 b 12.  
*ἀπατᾶν* 18 a 12, 15, 25 b 3, 27 b 1, 28 b 25.  
*ἀπάτη* 27 b 4, 5.  
*ἀπεινᾶν* 28 b 29.  
*ἀπειράκις* 7 a 14.  
*ἄπειρος* 4 a 1, 7 a 13, 9 a 24, 28, b 29, 32 a 24; πρόειπον ἐπὶ τὸ ἄπειρον 11 b 14 (cf. 25 b 16); αὐξήσεις εἰς ἄπειρον 16 a 15.  
*ἀπελθεῖν* 25 b 24.  
*ἄπειρος* 16 b 5, 6.  
*ἀπλοῦς*: ὄργανα 12 b 2; opposed to *μεικτός* 34 b 9, 10, 35 a 11, of νοῦς 5 a 16, 29 b 23, of flavours 22 b 11, of σῶμα 34 a 28; ἀπλὰ σώματα 16 a 28, τὰ ἀπλᾶ (=τὰ στοιχεῖα) 24 b 30, 25 a 3—unambiguous, of terms 17 b 2, 30—ἀπλῶς: opposed to *τινι* 31 b 12: 4 a 28, 10 a 30, 16 a 10, 14, 31 a 7, 33 b 9 (*δῖς*); ὡς ἀπλῶς εἰπεῖν 18 b 5; ἀπλῶς (vaguely) λέγειν 17 a 22, 26 a 26 (*δῖς*).  
*ἀποβάλλειν* 12 b 25, 28 b 5.  
*ἀποβλέπειν* 4 b 7, 8 a 6, b 1.  
*ἀπόδειξις* 2 a 15, 19, b 25, 7 a 26 (*δῖς*).  
*ἀποδιδῶναι* 2 b 23, 3 b 1, 5 a 4, 17, 6 a 27, 8 a 3, 9 b 16.  
*ἀποθεῖν*, opposed to actual contact 23 b 3, 34 b 27.  
*ἀποθνήσκειν* 35 b 5.  
*ἀποκαλύπτειν* 22 a 2.  
*ἀπολαμβάνεσθαι* 11 a 19.  
*ἀπολείπειν*: intransitive 8 a 28, 12 b 20; transitive 32 b 22.  
*ἀπολλύναι* 8 b 29.  
*ἀπολύεσθαι* 7 b 3, 9 a 29.  
*ἀπομνημονεύειν* 5 a 19.  
*ἀπονέμειν* 8 a 1.  
*ἀπορεῖν* 2 b 15, 8 a 34, 10 a 11, b 10, 14, 23 a 22, 24 b 3, 29 b 22, 31 a 24.  
*ἀπορία* 2 a 21, 3 a 3, 8 a 24, 9 b 22, 10 a 27, 11 a 9, 13 b 16, 16 a 29, 17 a 2, 22 b 19, 28, 25 b 17, 32 a 22, b 2, 13.  
*ἀπορον* 21 b 13.  
*ἀπορορροή* 18 b 15.  
*ἀπέρροια* 22 a 15.  
*ἀπύτασις* 20 b 8.  
*ἄποτος* 22 a 32.  
*ἄπους* 22 a 29.  
*ἀποφάνεσθαι* 3 b 22, 4 b 29, 5 a 1, 8, b 2, 9, 9 b 20.  
*ἀποφάναι*: opposed to *καταφάναι* 31 a 9, to φάναι 31 a 16.  
*ἀπόφασις* 25 a 19; opposed to φάσις 32 a 11.  
*ἀπτεσθαι*: to be in physical contact, as distinguished from *εἶναι αἰσθησιν*, 34 b 16: similarly 3 a 13, 14, 19 a 26, 23 a 4, 24, 26, 28, b 1, 3, 11, 20, 24 b 28, 30, 26 b 16, 34 b 27, 35 a 17.  
*ἄπτικός*: capable of coming into physical contact, of χυμὸς 35 b 13: capable of tactile sensation, of σῶμα 35 a 14, τὸ τοῦ ζῴου σῶμα 34 b 13; ἀπτική αἰσθησις 13 b 9: τὸ ἀπτικόν, the faculty of touching, ἀνευ τοῦ ἀπτικοῦ τῶν ἄλλων αἰσθήσεων οὐδεμία ὑπάρχει 15 a 3, 22 b 20, 23 a 16, b 26: τὸ αἰσθητήριον τὸ ἀπτικόν 23 b 30.  
*ἄπτός*: σῶμα ἅπαν ἄπτόν, ἄπτόν δὲ τὸ αἰσθητὸν ἀφή 34 b 12, ἄπται εἰναι αἰ διαφορά τοῦ σώματος ἢ σώμα 23 b 27, τὰ ἄπτα αἰσθητὰ πλείω 22 b 19, ἐν τῷ ἄπτῳ πολλὰ ἐναντιώσεις 22 b 25—14 b 11, 20 a 30, 22 a 8, 11, b 17, 23 a 18, b 9, 12, 14, 23, 24 a 12, 13, 14, 34, b 12, 25 (*δῖς*), 34 b 19, 22, 35 a 21, 23, b 13, 16, 18.  
*ἀπύρηνος* 22 a 29.  
*ἀπωθεῖν* 19 b 27.  
*ἀργία* opposed to *ἐνέργεια* 16 b 3.  
*ἄργυρος* 6 b 19.  
*ἀρετή* 8 a 3.  
*ἀριθμός*: of ordinary arithmetical numbers 2 a 22, 7 a 8, 9 a 7, 8 (*δῖς*), 26, ἁρμονικοὶ 6 b 29; idea-numbers, assumed by the Platonists τὸν τοῦ ἐπιπέδου δόξαν, αἰσθησιν δὲ τὸν τοῦ στερεοῦ 4 b 23, 24, 27, 29, 8 b 32, 9 a 1, b 4, 6, 8, 12, δ τῆς



ψυχῆς ἀριθμὸς 9 a 6, 25, τὸ ἐν τῷ ἀριθμῷ  
κινεῖν 9 a 17—ἀριθμῷ πλείω 33 b 12,  
ἀπειρα τὸν ἀριθμὸν 9 b 29; ἀριθμῷ ταῦτὸ  
καὶ ἐν 15 b 5, opposed to εἶδει ἐν 15 b 7  
(cf. 11 b 21), opposed to τῷ ἀνάλογον ἐν  
31 a 23; ἀριθμῷ ἀδιαίρετον καὶ ἀχώριστον  
opposed to τῷ εἶναι κεχωρισμένον 27 a 2,  
to τῷ εἶναι διαίρετον 27 a 5—one of the  
common sensibles 18 a 18, 25 a 16, 19,  
b 6.

ἀρμόζειν 8 a 1.

ἀρμονία: πῶς λέγεται 8 a 6 sqq., κῆρυς καὶ  
σύνθεσις ἐναντίων 7 b 30, λόγος τις τῶν  
μειχθέντων ἢ σύνθεσις 7 b 32; ἀρμονία  
τις 7 b 30, 8 a 4—7 b 34, 8 a 2, 18, 29  
—6 b 30.

ἀρμονικὸς 6 b 29.

ἀρτηρία 20 b 29, 21 a 1.

ἀρχαῖος: οἱ ἀρχαῖοι 27 a.

ἀρχεῖν: rule 10 b 13; ἀρχεσθαι, begin  
33 b 26.

ἀρχή: origin, beginning, starting-point,  
τῆς ζητήσεως 3 b 24 (cf. 13 a 20), ἐν τοῖς  
κατ' ἀρχὰς λόγοις 27 a 29, ἀποδείξεις  
2 b 25, 7 a 26, 28, 30, γεύσεων τὸ ποτὸν  
22 a 31, τοῦ πρακτικοῦ νοῦ 33 a 16, τῆς  
πράξεως 33 a 17, τῆς διανοίας 33 a 19,  
ἀρχῇ καὶ τελευτῇ 33 b 22, 24—origin,  
principle: joined with αἰτία, τοῦ ζῶντος  
σώματος 15 b 8 (cf. ἐχοντος ἀρχὴν κινήσεως  
καὶ στάσεως ἐν αὐτῷ 12 b 17), τοῦ ζῆν  
15 b 14, τῶν ζῶντων 2 a 6, τῶν φυτῶν  
11 b 28 (cf. 13 b 1), αἰσθητικῇ ἀρχῇ 11 b 30  
(cf. 27 a 15, 24 b 2); joined with δύναμις  
13 a 27 (cf. 16 b 18); contrasted with ὕλη  
30 a 19; τῶν εἰρημένων τούτων 13 b 12—  
principle or principles of things, ἀρχὴ  
πάντων, τῶν ὄντων 5 a 15, 18, 22, 25,  
ἀρχαὶ ἄλλα ἄλλων 2 a 22, 4 b 10, 18,  
24, 30, 5 a 1, b 12, 16, 19, 23, 10 b 2,  
12 a 12, joined with στοιχεῖα 10 a 19.

ἀρχικωτέρα 34 a 15.

ἀσαφής 13 a 11, 12.

ἀσπάλαξ 25 a 11.

ἀσπίς 23 b 15, 16.

ἀστήρ 5 b 1.

ἀσύμμετρος 30 a 31.

ἄσφαλος 21 b 24.

ἄσώματος 4 b 31, 5 b 12; μάλιστα 5 a 7;  
ἄσωματώτατον 5 a 27, 9 b 21.

ἄτῃρ (Emped.) 4 b 14.

ἄτελής: cf. animals 25 a 10, 32 b 23, 33 b 31;  
κίνησις τοῦ ἀτελοῦς 31 a 6 (cf. 17 a  
16).

ἄτιμότερος 4 b 4.

ἄτομος 4 a 2: τὸ ἄτομον εἶδος 14 b 27.

ἄτοπον 7 b 13, 8 a 13, 9 b 1, 10 a 23,  
11 a 14, 16, b 23, 32 b 4.

αὐλὸς 7 b 25, 20 b 7.

αὐξάνεσθαι 16 a 8, 30.

αὐξεσθαι 13 a 28, 15 b 26, 16 a 12.

αὐξή (v. l. αὐξησις) 11 a 30.

αὐξησις: α κίνησις 6 a 13, 32 b 9; joined  
with φθίσις 12 a 14, 13 a 25, 27, 15 b 25,  
34 a 24, b 20, with τροφή 16 a 10, with  
μέγεθος 16 a 17, with ἀλλοίωσις 15 b 23:  
τοῦ πυρὸς 16 a 15—15 b 29, 16 a 24.

αὐξητικὸς 15 b 12, 13.

αὐστηρὸς 21 a 30, 22 b 13.

αὐτόματος 15 a 28.

αὐτός: self, joined with reflexive pronoun,  
αὐτῆς καθ' αὐτὴν and the like, 6 b 15,  
17 a 8, 22 a 19, 25 b 15; 16; αὐτὸ=αὐτό  
καθ' ἑαυτὸ 8 b 25, 16 a 11; δι' αὐτοῦ=  
δι' ἑαυτοῦ 12 a 14 (cf. δι' αὐτοῦ 29 b 7);  
εἰς αὐτὸ=εἰς ἑαυτὸ 17 b 6—elliptical οἶον  
αὐτὸ 15 a 28, b 7, 16 b 24, 25, 24 a 1:  
ζῆν αὐτὸ φαμεν (int. τὸ ζῶον) 13 a 23;  
αὐτοῦ=τοῦ αἰσθητοῦ 26 b 16, τοῦ ἀκουστοῦ  
19 b 8; αὐτῶν=τῶν ἀπτῶν 23 b 11, 24 b  
28, 29, 35 a 17; ἐπ' αὐτῷ (int. τῷ νοούντι)  
17 b 24, 25, ἐν αὐτῷ (v. l.) (int. τῷ γνωρί-  
ζοντι) 30 b 24: alone, *per se* αὐτῇ ἄνευ  
αἰσθήσεως 27 b 15, οὐχ ἢ αὐταὶ (distinct),  
ἀλλ' ἢ μία 25 a 31—(Platonic) αὐτὸ τὸ  
ζῶον=τὸ αὐτόζῶον 4 b 19.

αὐτός, δ: neuter ταῦτον 4 a 28, 18 b 13,  
24 a 25, 27 a 22, b 6, 29 b 12, 32 b 1:  
joined with εἰς 23 a 20, 25 b 26, 26 a 28,  
31 a 28, ἐν καὶ ταῦτον 18 b 13, ταῦτὸ καὶ  
ἐν 15 b 4 (cf. 26 b 30, 27 a 6): ἡ αὐτὴ by  
attraction=ταῦτὸ 27 b 17 (cf. 4 a 28,  
33 b 22): ἐν τῷ αὐτῷ τόπῳ 35 a 2, ἐν τῷ  
αὐτῷ without τόπῳ 9 a 22, 23, b 3, 18 b  
17: ἐπὶ τοῦ αὐτοῦ of the person 12 a 26  
of the sensible object 25 b 1.

ἀφαιρεῖν 9 a 8.

ἀφαίρεσις: εἰς ἀφαίρεσιν 3 b 15, τὰ ἐν  
ἀφαιρέσει ὄντα 29 b 18, λεγόμενα 31 b 12,  
32 a 5.

ἀφάλλεσθαι 20 a 22, 26.

ἄφή: sense of touch (see II., c. 11) δύναται  
χωρῆσθαι τῶν ἄλλων αἰσθήσεων 13 b 6,  
15 a 4 (cf. 35 b 6 sq.), αἰσθήσεως πρῶτον  
ὑπάρχει πάντων ἀφῆ 13 b 5, οὐχ οἶον τε  
ἀνευ ἀφῆς εἶναι ζῶον 34 b 24, ἀνευ ἀφῆς  
οὐδεμίαν ἐνδέχεται ἄλλην αἰσθήσιν ἔχειν  
35 a 13, b 1, τὰ ζῶα πάντ' ἔχουσι τὴν  
ἀφῆν 14 b 3, τὴν ἀναγκασιότατην αἰσθήσιν  
14 a 3 (cf. 35 b 5—7, 17), ἀφῆ ὥρισταί  
τὸ ζῆν 35 b 16, ἀνάγκη μόνης ταύτης  
στερισκόμενα τῆς αἰσθήσεως τὰ ζῶα ἀπο-  
βιήσκειν 35 b 4, ὁ ἀνθρώπος κατὰ τὴν  
ἀφῆν πολλὰ τῶν ἄλλων ζῶων διαφερόντως  
ἀκριβοῦς 21 a 21; ἡ ἀφῆ πλείους ἔχει  
διαφορὰς 18 a 14, εἰ μὴ μία ἔστιν αἰσθήσις  
ἄλλα πλείους 22 b 18, τοῦ ἀπτοῦ καὶ  
ἀνάπτου 24 a 12, πάντων ἡ ἀφῆ τῶν  
ἀπτόντων ἔστιν ὥσπερ μεσότης 35 a 21 (cf.  
24 a 10), τῷ αὐτῶν ἀπτεσθαι ἔστιν, διὸ  
καὶ τοῖονμα ἔχει 35 a 17 (cf. 23 b 3),  
ὑπερβολὴ τοῦ ἀπτοῦ φθέρει τὴν ἀφῆν  
35 b 16, ἡ ἀφῆ ἐστὶ τῆς τροφῆς αἰσθήσις  
14 b 7, ἡ ἐπὶ τῆς γλώττης ἀφῆ 23 a 17,  
γεῦσις ἀφῆ τις 21 a 19, 34 b 18, 21—14 b  
15, 18 a 19, 19 a 30, 22 a 10, 34, b 6, 17,  
33, 23 a 11, 20, b 31, 24 b 23, 24, 26, 28,  
26 b 6, 34 a 1, b 10, 13, 35 a 18—physical  
contact 35 b 12—organ of touch 25 a 7  
(cf. 35 b 1 sq.).

ἀφίεσθαι 7 b 13, 14 b 27.

ἄφοβος 21 a 15.

ἀφορίσθαι 16 a 20.

ἀφρονέστατος 10 b 5.

ἀφύης 21 a 24, 25.  
 ἀφωνος 21 a 4.  
 ἀχρους 18 b 27, 28.  
 ἀχώριστος 3 a 15, b 17, 26 b 29 (*δύς*), 27 a 2,  
 33 b 25.  
 ἀψοφος 18 b 27, 20 a 7.  
 ἀψυχος 3 b 26, 13 a 21, 20 b 6, 7, 24 b 13.

Β, τὸ 31 a 26, 28, b 1.  
 βάδις 6 a 9.  
 βάθος 4 b 21, 23 a 22.  
 βάπτειν 35 a 2, 3.  
 βαρὺς opposed to ὀξὺς 20 a 29, 31, 32, 22 b  
 25, 26 a 31, b 6.  
 βαρύτης 22 b 30.  
 βελόνη 20 a 24 (*δύς*).  
 βήξ 20 b 33.  
 βήττειν 20 b 31.  
 βία: βία opposed to φύσει 6 a 22, 23, 25,  
 26, b 6, 32 b 17.  
 βιαίος 6 a 26, 7 b 1, (of sound) 22 a 26.  
 βλαστάνειν (Emped.) 30 a 29.  
 βλέπειν 8 b 22.  
 βλέφαρον 21 b 29.  
 βοήθεια 4 a 12.  
 βούλεσθαι: joined with ἐπιθυμεῖν 11 a 28:  
 τὸ αὐτὸ βούλεται 27 a 25, εἶναι βούλεται  
 7 a 4 (cf. 23 a 14): βούληθεις 17 a 27,  
 ὁπότεν βούληται 17 b 24, 27 b 18.  
 βουλεύεσθαι 31 b 8.  
 βουλευτικός 33 b 3, 34 a 7, 12.  
 βούλησις: ἀν ὁρεῖς 14 b 2, 33 a 23, ἐν τῷ  
 λογιστικῷ γίνεται 32 b 5 (cf. 33 a 24):  
 νικᾷ καὶ κινεῖ τὴν βούλησιν 34 a 13.  
 βράτχων 20 b 13.  
 βραδὺς 20 a 32, b 4.  
 βραδυτής 20 a 33.  
 βροντή 24 b 11.

Γ, τὸ 31 a 26, 27.  
 γαῖα (Emped.) 4 b 13 (*δύς*).  
 γεγωνεῖν 20 a 1.  
 γελοῖος 14 b 25.  
 γένεσις 416 b 15: αὐτομάτῃ 15 a 27, opposed  
 to φθορά 34 a 23, to αἰσθήσις 16 a 23:  
 προτέρα τῇ γενέσει 12 a 26.  
 γενητός 34 b 4.  
 γεννᾶν 15 a 26, 16 b 16, 24, 17 b 17 (*δύς*).  
 γέννησις 15 a 23.  
 γεννητικός 16 a 19, b 25, 32 b 10, 24.  
 γένος: summum genus, category 2 a 23, 10 a  
 18, 12 a 6: genus (opposed to εἶδος,  
 species) 2 b 3, ἕτερα τῷ γένει 24 b 32,  
 ἐν τῷ αὐτῷ γένει 31 b 11, ὅλη ἐκάστῳ  
 γένει 30 a 11: distinct species (like εἶδος),  
 ἕτερον γένος ψυχῆς 13 b 26, ἀλλοιώσεως  
 17 b 7, mankind 21 a 16, 23 (cf. γένει  
 τῶν ζώων οὐ τῷ τυχεῖν 34 b 24, τὸ γένος  
 καὶ ἡ ὕλη 17 a 27).  
 γεύεσθαι 22 b 8.  
 γεῦσις: sense of tasting (see II., c. 10),  
 χυμοῦ 18 a 13 (cf. 26 a 18, 22), πικροῦ  
 καὶ γλυκέος 22 b 25, τοῦ γευστοῦ καὶ  
 ἀγεύστου 22 a 29, τροφῆς 34 b 18, κρίνει  
 γλυκὺ καὶ πικρὸν 26 b 11, δοκεῖ εἶναι τῷ  
 ἀπτεσθαι 23 b 3, ἀφή τις 21 a 18, 34 b 18,  
 21 (cf. 23 a 20), ἡ τοῦ γευστικοῦ ἐνέργεια

26 a 14, ἀναγκαῖον ἔργον τῆς γλώττης  
 20 b 19: ἀκριβεστέρων ἔχομεν τὴν γεῦσιν  
 21 a 18: τοῦ εὖ ἕνεκα, ἵνα αἰσθάνηται τὸ  
 ἐν τροφῇ ἡδὺ καὶ λυπηρὸν 35 b 22: ὑπερ-  
 βάλλον φθεῖρει 26 b 1; φθαρτικὸν τῆς  
 γεύσεως 22 a 31, 33—flavour (=χυμός)  
 22 a 32.

γευστικός 22 b 5, 15, 26 a 15.  
 γευστός: τὸ γευστὸν ἀπτόν τι 22 a 8, τὸ  
 σῶμα ἐν ᾧ ὁ χυμός 22 a 10, ὁ χυμός 22 a  
 17, ὕγρον 22 a 34, τὸ ποιητικὸν ἐντελεχέα  
 τοῦ γευστικοῦ 22 b 15—22 a 29, b 3 (*δύς*).  
 γῆ: πάντα στοιχεῖα κριτὴν εἰληφε πλήν τῆς  
 γῆς 5 b 8; κάτω φέρεσθαι κατὰ φύσιν  
 16 a 1, 7, 6 a 28; μεταξὺ τῆς γῆς καὶ τοῦ  
 περιέχοντος 18 b 22; διαφοραὶ γῆς 35 a  
 22; τὰ φυτὰ γῆς ἐστὶν 35 b 1, σῶμα  
 μεικτὸν ἐκ γῆς κτέ. 23 a 14; ὅσα ἐστὶν ἐν  
 τοῖς τῶν ζώων σώμασιν ἀπλῶς γῆς 10 a 30  
 (cf. 35 a 25); τὰ ἄλλα ἔξω γῆς αἰσθητήρια  
 ἂν γένοιτο 35 a 15, ἐνὺτος ἐν ταῖς αἰσθή-  
 σεσιν (=sense-organs) πυρὸς καὶ γῆς 17 a  
 4 (cf. 25 a 6), τὸ ἀπτικὸν αἰσθητήριον οὐκ  
 ἐστι γῆς 35 b 3.

γῆνιος 35 a 21.  
 γῆρας 8 b 20, 22.  
 γιγνῆσθαι 33 b 22.  
 γιγνεσθαι: comes into being, γίνεται τὸ  
 σαφές 13 a 11, λόγος κοινός 14 b 22, τὸ  
 ἔχον τὴν ἐπιστήμην 17 b 5, ἡ πρώτη μετα-  
 βολὴ ὑπὸ τοῦ γεννώμενου 17 b 17, ὁ κατ'  
 ἐνέργειαν φόφος 19 b 9, 11 (cf. 25 b 31),  
 πληγὴ 19 b 13, 20, ὥσιν καὶ πληγὴ 35 b  
 10, ἡχῶ 19 b 25, 27, φῶς 19 b 30, τοῦ  
 φωτός γιγνομένου (v. l. τευνομένου) ποτὲ  
 μεταξὺ τῆς γῆς κτέ. 18 b 22, ἡ κατὰ τόπον  
 κίνησις τοῖς ζώοις 11 a 29, αἰσθήσις 23 b  
 21 (cf. 23 a 1, 16, 25 b 1), αἰσθητήρια  
 35 a 15, αἱ κινήσεις 23 a 10, 28 b 13, 26,  
 29 a 2, ἀφ' ἧς 22 b 7, τὸ ὁρᾶν 19 a 18, φάντασμα  
 ἡμῶν 28 a 2, φαντασία 27 b 15 (cf. 28 b 12),  
 τὸ νοεῖν 29 a 13, ἡ βούλησις 32 b 5, ἀκρα-  
 σία 34 a 14, πάντα τὰ γιγνόμενα 31 a 3,  
 τὸ γεγόμενον 34 a 24, ὁστέα λευκὰ (Emped.)  
 10 a 6—πολλὰ ἐξ ἀλλήλων 16 a 24, ἐκ τῶν  
 Δημοκρίτου σφαιρίων ἂν γένωνται στιγμαὶ  
 9 a 12—εἰ γένοιτο κενὸν τὸ μεταξὺ 19 a  
 16, 20, πρὸς ἑκάτερον γίνεται ἑκάτερον τῶν  
 ἄκρων 24 a 6 and often—happen, ὁτῶν  
 γίνεται καὶ κατὰ λόγον 14 a 25, 19 b 21,  
 33 b 6, τὰ γινόμενα ἐν τῷ διαφανεῖ 21 b  
 31, γενομένων ἢ ἐσομένων 30 a 31.  
 γιγνώσκειν: τὸ γινώσκειν τῆς ψυχῆς ἐστὶ  
 11 a 26 (cf. 11 a 24); γινώσκεισθαι τῷ  
 ὁμοίῳ τὸ ὁμοιον 4 b 17, 5 b 15, 10 a 24  
 (cf. τὸ κινούμενον κινουμένῳ 5 a 28, τῷ  
 εὐθεὶ αὐτὸ καὶ τὸ καμπύλον 11 a 5); γινῶναι  
 τὴν οὐσίαν 2 a 14, τὸ τί ἐστὶ 2 b 17;  
 joined with αἰσθάνεσθαι 4 b 9, 9 b 30,  
 with νοεῖν 10 a 26, with φρονεῖν 29 a 10,  
 with θεωρῆσαι 2 a 7: of the soul, with  
 κινεῖν, as both cognisant and movent,  
 5 a 18, 23.  
 γλαφυρωτέρως 5 a 8.  
 γλυκὺς opposed to πικρὸς 21 a 27, 22 b 11,  
 25, 26 b 11, 31; γλυκεῖα δσμῇ opposed to  
 πικρὰ δσμῇ 26 b 2.

γλώττα: καταχρήται ἡ φύσις ἐπὶ τε τὴν γένεσιν καὶ τὴν διάλεκτον 20 b 18, ἔχει τὸ ζῶον ὅπως σημαίνει τι ἑτέρω 35 b 24; ἡ σὰρξ καὶ ἡ γλώττα πῶς ἔχουσι πρὸς τὸ αἰσθητήριον 23 b 17; ἡ ἐπὶ τῆς γλώττης ἀφή 23 a 17 (cf. ἀπάντων τῶν ἀπτῶν αἰσθάνεται κατὰ τὸ αὐτὸ μῦρον καὶ χυμοῦ 23 a 17); μήτε κατάξηρον ὅσαν αἰσθάνεσθαι μήτε λίαν ὑγρὰν 22 b 6, πλήρει πικρᾶς ὑγρότητος 22 b 9; ἔστι τῇ γλώττῃ ψοφεῖν 20 b 30.

γνωρίζειν: τὰ συμβεβηκότα 3 a 1, τὸ νεῖκος 10 b 6, ἀμφω ἅμα 25 a 24; without object 5 b 21; τῷ ὁμοῦ τὸ ὁμοιον 9 b 26, 27 b 5 (cf. 10 a 8, 20); τῷ ἐναντίῳ πως γνωρίζει. δεῖ δὲ δυνάμει εἶναι τὸ γνωρίζον καὶ ἐνεῖναι ἐν αὐτῷ (v. l.) 30 b 23, 24 (cf. 30 b 22); interpreting κρατῇ (Anaxag.) 29 a 19; joined with αἰσθάνεσθαι 9 b 25, 31, 10 b 16 (cf. 31 b 6), with κρίνειν 27 a 21.

γνωριμώτερος 13 a 12.

γνωριστικός 4 b 28.

γνώσις 2 a 5.

γονή 5 b 3, 4.

γραμματεῖον 30 a 1.

γραμματική 17 a 25, b 1.

γραμμῇ 2 b 19, 3 b 19: φασὶ κινήθεισαν γραμμὴν ἐπίπεδον ποιεῖν, στιγμὴν δὲ γραμμὴν, καὶ αἱ τῶν μονάδων κινήσεις γραμμαι ἔσσονται 9 a 4, 5, εἰ μὴ διαιροῦνται αἱ γραμμαὶ εἰς στιγμαὶς 9 a 30.

γράφειν 12 b 22, 30 a 1.

γραφή 27 b 24.

γωνία 2 b 20.

Δ, τὸ 31 a 26, 27.

δακτύλιος 24 a 19.

δεινός 27 b 21, 24.

δεκτικός 18 b 27, 25 b 23, 29 a 15, 34 a 29, 35 a 22: τὸ δεκτικὸν τῶν αἰσθητῶν εἰδῶν ἀνεῖν τῆς ὕλης 24 a 18, μορφῇ καὶ εἰδός τι καὶ οἶον ἐνέργεια τοῦ δεκτικοῦ 14 a 10.

δέρμα 20 a 14, 25 a 11.

δέχεσθαι: τοῦ δεχομένου σώματος 7 b 21, οὐδὲ φαινόμενον τοῦ τυχόντος δέχεσθαι τὸ τυχόν 14 a 24, τὸν ἀέρα 20 b 16, 21 a 5, 22 a 1, τὸ σημεῖον 24 a 20, τὰ εἶδη τῶν αἰσθητῶν 24 b 2.

δηλοῦν: τὸ ὅτι 13 a 14, ὅτι πλείους 23 a 17; αἱ διαφοραὶ τῶν ψοφούντων δηλοῦνται 20 a 27, δηλοῦται ὥσπερ ἡ στέρσις 30 b 21.

διὰ impleting a medium: διὰ τοῦ μεταξὺ 21 b 9, 22 a 9, 13, 24 b 29, 34 b 28, 35 a 16, διὰ μέσου 23 b 12, 34 b 31, διὰ τοῦ μέσου 23 b 7, δι' ἑτέρου 35 a 16, 19, δι' ἑτέρων 23 b 4, 34 b 15, δι' ὕμενος 23 b 9, δι' ἐνός 24 b 31, δι' ἀμφοῖν 25 a 2, δι' αὐτῆς 35 a 19, δι' οὗ 23 a 10, 16.

διάδηλος 21 a 14, 31.

διαδιδόναι 35 a 9.

διαδιδόνειν 4 a 7.

διάθesis: τὰς στερητικὰς διαθέσεις 17 b 15. διαίρειν: primarily to split, bisect, cut up 6 b 32, 7 a 1, 9 a 30, τὰ φυτὰ 13 b 17, τὰ φυτὰ καὶ τῶν ζώων ἕνια 9 a 9, 11 b 19, τὸν χρόνον 30 b 12, τῶν διηρημένων 27 a 4, 30 b 11: hence to distinguish διαί-

ρετόεν 17 a 21, διήρηται πρότερον 29 b 30, διελεῖν ἐν τίνι τῶν γενῶν 2 a 23, τὰ μέρη τῆς ψυχῆς 33 b 1, 2: τῶν διαιρεθεισῶν κατηγοριῶν 2 a 25, 10 a 15.

διαίρεσις: as logical term 2 a 20, 30 b 3— as geometrical term 30 b 20.

διαίρετός 11 b 27, 27 a 3, 5, 7, 11, 12, 30 b 9, 16.

διαλεκτικός 3 a 29: διαλεκτικῶς 3 a 2.

διάλεκτος 20 b 8, 18.

διαμένειν 14 b 5, 6.

διάμετρος 30 a 31.

διανοεῖσθαι: λέγειν νοῦν ᾧ διανοεῖται καὶ ὑπολαμβάνει ἡ ψυχὴ 29 a 23, ἡ ψυχὴ τοῦτο ᾧ διανοοῦμεθα πρῶτως 14 a 13; βέλτιον λέγειν τὸν ἄνθρωπον τῇ ψυχῇ διανοεῖσθαι 8 b 14, τὸ διανοεῖσθαι καὶ φιλεῖν ἢ μισεῖν οὐκ ἔστι τοῦ νοῦ πάθος 8 b 25, κινήσεις εἶναι δοκεῖ 8 b 3 sq. (cf. 8 b 6, 9); διανοεῖσθαι ἐνδέχεται καὶ ψευδῶς 27 b 13; διανοεῖσθαι φοβερόν τι ἢ ἥδὺ 32 b 30.

διανοητικός: τῇ διανοητικῇ ψυχῇ 31 a 14; τὸ διανοητικόν τε καὶ νοῦς 14 b 18, without article διανοητικῷ 13 b 13, 14 a 32.

διάνοια: joined with λογισμός 15 a 8; ἀφνεῖς τὴν διάνοιαν 21 a 25; φαντασία ἕτερον διάνοιας 27 b 15, τὸ κριτικὸν διάνοιας ἔργον 32 a 16; διάνοια πρακτικὴ 33 a 18, 19 (cf. λεγούσης τῆς διάνοιας φεύγειν τι ἢ διώκειν 33 a 2): many animals without it 10 b 24—meaning, intention 4 a 17.

διαπνεῖσθαι 11 b 9.

διαπορεῖν 3 b 20.

διασαφεῖν 4 b 1, 14 b 14, 16 b 30, 17 b 28.

διασπᾶν 11 a 20, 16 a 7, 32 b 5.

διάστασις 32 a 28.

διάστημα 18 b 25.

διατελεῖν 11 b 23, 27 b 2.

διατέμνεσθαι 13 b 21.

διατίθεσθαι 14 a 11.

διαφανές: τί τὸ διαφανὲς καὶ τί τὸ φῶς 18 b 4—14, τὸ φῶς ἐστὶ πυρὸς ἢ τοιοῦτου τινὸς παρουσίας ἐν τῷ διαφανεῖ 18 b 16 (cf. 18 b 19), ἡ ἐντελέχεια τοῦ διαφανοῦς 19 a 11, τὸ διαφανὲς ὑπὸ πυρὸς γίνεται διαφανὲς 19 a 24, 25; ἄχρουν 18 b 28, ἀήρ καὶ ὕδωρ ἀμφω διαφανῆ 25 a 1 (cf. 35 b 22, 19 a 33); τὸ χρῶμα κινεῖ τὸ διαφανὲς 19 a 13; τὸ διαφανὲς ἐστὶν ἐντελέχεια ἢ δυνάμει 18 b 30 (cf. 18 b 12); τὸ κατ' ἐνέργειαν διαφανὲς 18 b 1, 19 a 10 (i.e. light, cf. 18 b 9 sq.): τὰ γινόμενα ἐν τῷ διαφανεῖ 21 b 31.

διαφέρειν: εἶδει ἢ γένει 2 b 3, μεγέθει ἢ μικρότητι 9 a 14, τῷ ἀπλῶς καὶ τινι 31 b 12, τῷ τέλει 33 a 14; διαφέρων ἀριθμὸς 9 b 5; 2 a 26, 3 b 26, 9 a 3, 10 b 9, 17 b 19, 21 a 26, 23 b 12, 26 b 14, 28 b 26, 31 a 20, 24, 32 a 12, 33 b 4—διαφέρονται περὶ τῶν ἀρχῶν 4 b 30, περὶ τὸ πλῆθος 5 a 2.

διαφερόντως 3 a 29, 21 a 22.

διαφθεῖρην 35 b 8.

διαφορά 9 a 20, 21, 18 a 1, 27 b 26, 29 a 12, 32 a 27, ἔχει διαφοράν 16 b 4, διαφοράν

τῶν ζῴων (difference between animal and animal) 14 a 1, ἐν τῇ ψυχῇ 30 a 14, δύο διαφοραῖς ὁρίζονται μάλιστα τὴν ψυχὴν 27 a 17 (cf. 3 b 25—27)—distinguishing quality διαφορὰν τῶν ἀπτῶν 24 a 13; often in plural, varieties τῆς ψυχῆς 13 b 20, τῆς ὑπολήψεως 27 b 25, τοῦ σώματος ἢ σώμα 23 b 27, αἱ τὰ στοιχεῖα διορίζουσι 23 b 28, γῆς 35 a 22, τοῦ ὑποκειμένου αἰσθητοῦ 26 b 10, τῶν ψοφούντων 20 a 26, τῶν χρωμάτων 21 a 14, περὶ χρώμα 22 b 32, χυμῶν 22 b 14, τῆς κινήσεως 20 a 10; ἡ ἀφ' ἧς πλείους διαφορὰς 18 a 14.

διαχῶν 19 b 21.

διαψεύδασθαι 28 b 20.

διδασκαλία 17 b 11.

διδασκαλικὸς 17 b 13.

διδόναι 7 b 29.

διέρργειν 23 b 10.

διεξίεναι 7 a 14.

διερὸς 23 a 25, 23 b 1 (δῆς).

διέρχεσθαι 9 b 22, 20 a 6.

διευρύνεσθαι 22 a 3.

δικνεῖσθαι 23 a 5.

δυστάναί 24 b 12.

διορίζειν 2 b 11, 4 b 19, 12 a 5, 13 a 9, 21, 15 a 21, b 9, 16 a 20, b 32, 17 b 29, 18 a 1, 19 b 4, 26, 20 b 5, 23 a 10, b 28, 27 a 15, 29, b 29, 32 a 18, 25.

διος (Emped.) 4 b 14.

διότι, "that" 4 a 19: "why" 21 a 4.

δισσαχῆ 6 b 32.

δισσῶς 6 a 10, 15 b 20.

διττὸς 15 b 2, 16 b 26, 19 b 5, 26 a 7, 8, 33 b 14.

διχῶς 6 a 4, 12 a 10, 22, 14 a 4, 17 a 10, 12, 26 a 23, 30 b 6.

δίψα 14 b 12, 13.

διώκειν: opposed to φεύγειν 31 a 9, 16, b 9, 32 b 29, 30, 33 a 2; τὸ μείζον διώκει 34 a 9.

διωκτὸς 31 b 3, 32 b 28.

δοκεῖν 2 a 4, 9 and often.

δόξα: ἔξις καθ' ἣν κρίνομεν καὶ ἀληθεύομεν ἢ ψευδόμεθα 28 a 4, τῆς ὑπολήψεως διαφορὰ (= ὑπόληψις τις) 27 b 25; τὰ ἄλλα ἴσα (πλὴν ἀνθρώπου) δόξαν οὐ δοκεῖ ἔχειν 34 a 10; ἀληθῆς 27 b 10, 28 b 5, ἀληθῆς καὶ ψευδῆς 28 a 19; δόξη ἐπεται πίστις 28 a 20 (cf. 28 a 22); μετ' αἰσθήσεως, δι' αἰσθήσεως 28 a 25, συμπλοκὴ δόξης καὶ αἰσθήσεως [definitions of φαντασία] 28 a 26 (cf. 28 a 27, 28, 30); ἡ τοῦ καθ' ἑκάστα distinguished from ἡ καθόλου 34 a 19 sq.—(Platonic) κρίνεται τὰ πράγματα δόξη 4 b 26, δόξαν τὸν τοῦ ἐπιπέδου ἀριθμὸν 4 b 23—τὰς τῶν προτέρων δόξας 3 b 22 (cf. 7 b 27).

δοξάζειν 11 a 27, 27 b 20, 21, 28 a 20, b 1: distinguished from αἰσθάνεσθαι 13 b 31.

δοξαστικὸς 13 b 30.

δριμύς 21 a 30, b 2, 22 b 13.

δυάς 29 b 20.

δύναμις: ἡ ὕλη δύναμις, τὸ δ' εἶδος ἐντελέχεια 12 a 9, 14 a 16; πρότεροι τῶν δυνάμεων αἱ ἐνέργειαι 15 a 19, ἡ κατὰ δύναμιν ἐπιστήμη χρόνῳ προτέρα ἐν τῷ ἐνί, ὅλως

δὲ οὐ χρόνῳ 30 a 21, 31 a 2: δύναμις opposed to ἐντελέχεια 17 a 21, b 4, to ἐνέργεια 28 a 6: οὐχ ἀπλοῦ ὄντος τοῦ δυνάμει λεγομένου 17 b 30: δυνάμει alone 18 b 10, 30 a 6, b 11, 23; δυνάμει τινὸς δι σῶμα 12 b 27, τοιοῦτον 22 a 7, 23 b 31, 29 a 16, ἐκεῖνα 30 a 11, ταῦτα 31 b 27, τὸ σῶμα τὸ δυνάμει δὲ 13 a 2, δυνάμει ζῶν ἔχοντος 12 a 20, 28, δυνάμει δὲ ὥστε ζῆν 12 b 26; τοῦ δυνάμει ὄντος λόγος ἢ ἐντελέχεια 15 b 14, ἐν τῷ ἐφεξῆς ὑπάρχει δυνάμει τὸ πρότερον 14 b 29, ἐν τῷ δυνάμει ὑπάρχοντι ἢ ἐντελέχεια 14 a 26: δυνάμει δὲ opposed to ἐντελέχεια 17 b 10; τῶν ἐν δυνάμει ὄντων opposed to ἐντελέχειά τις 2 a 26; δυνάμει opposed to ἐντελέχεια 13 b 19, 17 b 3, 12, 18 a 4, b 30, 22 b 15, 29 a 29, b 30, 31, 31 b 25 (βίς), to ἐνέργεια 17 a 7, 13, 14, 19 b 5, 22 a 18, 24 a 2, 9, 30 a 16, b 7, 31 a 4, to ἐνεργεῖν 17 a 10, to κατ' ἐνέργειαν 29 b 8, to τῷ εἶναι 27 a 6; καὶ λόγῳ καὶ δυνάμει 32 b 4; κατὰ δύναμιν opposed to ἐντελέχεια 17 a 30, to κατ' ἐνέργειαν 26 a 4, 19, 24—δύναμις τῶν τοιούτων 30 a 8, ἐντελέχεια καὶ λόγος τοῦ δυνάμιν ἔχοντος εἶναι τοιούτου 14 a 28: power, faculty, function σώματος ἢ μέρους ἢ δυνάμεως 3 a 27, τοῦ ὀργάνου 13 a 1 (cf. 24 a 25, 28), τῆς ψυχῆς 14 a 29, 31, 15 a 25, b 23, 16 a 19, 21, 32 a 15, 33 a 31, b 2, 11 b 15; joined with ἀρχῇ 13 a 26, 16 b 18, with λόγος 24 a 28, with ἔξις 28 a 3; θρηπτική 32 b 15, 34 a 26, θεωρητική 13 b 25: χρήται τῷ νῷ ὡς δυνάμει τινί 4 a 30.

δύνασθαι στρατηγεῖν 17 b 31, δύναται ἐνεργεῖν δι' αὐτοῦ 29 b 7, αὐτὸν νοεῖν 29 b 9, ψοφῆσαι 19 b 7, αἰσθάνεσθαι 29 a 31, ἐν ἐκ πλείονων φαντασμάτων ποιεῖν 34 a 9; τὸ δυνάμενον κινεῖν ἑαυτὸ 6 a 1, κινεῖσθαι 20 a 21, ὑγραίνεσθαι σωζόμενον 22 b 4, ἰδεῖν 24 b 5, ἀκούειν, ψοφεῖν 25 b 30.

δυνατὸς 17 a 26, 29 a 22, θεωρεῖν 17 a 28, οὐδὲ τῶν δυνατῶν αἰσθάνεσθαι 24 b 8—δυνατὸν ἢ ἀδύνατον 17 a 1 (cf. 13 a 31).

δυσμῇ 18 b 26.

δυσχέρεια 10 a 27.

δυσώδης 21 b 22.

ἐγγίγνεσθαι 8 a 21, b 18, 9 b 6, 14 a 27, 26 a 5.

ἐγγύθεν 21 b 16, 23 b 6.

ἐγκατοικοδομεῖσθαι 20 a 9.

ἐγκρατῆς 33 a 7.

ἐγρήγοροις 12 a 24, 25, b 28, 32 b 12.

ἐγγχεῖν 6 b 19.

εἰδησις 2 a 1.

εἶδος: specific form, ἐν τούτοις τὸ εἶδος 3 b 6, κατὰ κοινὸν εἶδος 33 a 22; joined with λόγος 3 b 2, 14 a 14, with μορφή 7 b 23, 12 a 8, with μορφή, λόγος and ἐνέργεια 14 a 9: τὸ εἶδος ἐντελέχεια 12 a 10, 14 a 17; οὐσίαν ὡς εἶδος 12 a 20 (cf. 14 a 15); ὁ λόγος εἶδος (v.l. δδε) τοῦ πράγματος 3 b 2, εἶδη τῶν πραγμάτων 4 b 27: τὰ εἶδη τῶν αἰσθητῶν 24 b 2, λευκοῦ καὶ μέλανος 27 a 8, εἶδος αἰσθητῶν

32 a 3; τῶν αἰσθητῶν εἰδῶν 24 a 18, ἐν τοῖς εἰδεῖσι τοῖς αἰσθητοῖς 32 a 5, so εἶδη alone 31 b 28, 29, 34 a 30: εἶδος=νοητὸν εἶδος 29 a 15, 29, 31 b 2, εἶδος εἰδῶν 32 a 2, τόπον εἰδῶν 29 a 28—Platonic ideas 4 b 24—species, τὸ οἰκεῖον καὶ τὸ ἄτομον εἶδος 14 b 27, ἄλλο εἶδος κινήσεως 31 a 6, τὰ εἶδη τῶν χυμῶν 21 a 17, 22 b 10; τὸ τῷ εἶδει ἀδιαίρετον 30 b 14, ἐν τῷ νοητῶν εἶδει 29 b 28, ἐν εἶδει opposed to ἀριθμῷ πλείω 33 b 10, τοῦ ἀριθμῷ 15 b 7, τὴν αὐτὴν τῷ εἶδει, εἰ καὶ μὴ ἀριθμῷ 11 b 21 (cf. 9 a 10), εἶδει ἡ γένει 2 b 3.

εἰδωλοποιεῖν 27 b 20.

εἰκάζειν 3 a 1.

εἰλικρινής 26 b 4.

εἶναι: τὸ εἶναι πλεοναχῶς λέγεται 12 b 8: ὃν δυνάμει, is=possible 8 a 31, 18 a 27, 20 b 30, 25 b 28, 27 b 19, 28 b 10, 13, 25, 29 a 4, 30 b 10—ὃν ἐνεργείᾳ, is=actually exists, εἰ ἔσται 3 b 3, 6 a 21 (δῖς), 7 a 24, 9 b 28, 15 b 12, 13, 16 a 7, 8, b 14, 16, 20, 17 a 6, 22, 24, 18 b 4, 23 a 24, b 12, 24 b 22, 25 a 8, 27 b 16, 24, 29 a 27, 30 b 11, 34 b 7, 35 b 20, ἔστω 27 b 26, 31 a 25, ἐσομένῳ 30 b 1—ὃν ὡς ἀληθές, is=is so, is true, οὐκ ἔστιν 23 b 4, 29 b 20, ἔστω 9 b 30. See also ὄν.

—τὸ εἶναι, quiddity: τὸ σαρκὶ εἶναι 29 b 12, 17 (cf. 8 a 25), τῷ τοῖς ἄλλοις μορίοις τοῦ ζῴου 8 a 26, τὸ πελέκει εἶναι 12 b 13, αἰσθητικῷ εἶναι καὶ δοξαστικῷ 13 b 30 (cf. 24 a 27), τροφῇ καὶ αὐθητικῷ εἶναι 16 b 12, τὸ χρώματι εἶναι, τὸ κινήτικῷ εἶναι τοῦ κατ' ἐνέργειαν διαφανοῦς 19 a 10, τὸ μεγέθει εἶναι 29 b 10, ὕδατι εἶναι 29 b 11, τὸ εὐθεῖ εἶναι 29 b 20: τὸ τί ἦν εἶναι 30 b 28, τῷ τοιούτῳ σώματι 12 b 11 (=οὐσία ἡ κατὰ τὸν λόγον 12 b 10, 11), joined with ὁ λόγος 12 b 15: τῷ εἶναι κεχωρισμένῳ 27 a 3, διαιρετῶν 27 a 5, ἕτερον 32 b 1, τῷ εἶναι opposed to δυνάμει 27 a 7; ἐστὶ ταυτὸν, τὸ δ' εἶναι ἕτερον 24 a 25, 26 a 16, οὐ τὸ αὐτὸ 25 b 27, 31 a 29, πλείω 31 a 19, ἄλλο 31 a 14 (cf. τὸ τί ἦν εἶναι ἄλλο 29 b 19).

εἶς: τὸ ἐν πολλαχῶς λέγεται 12 b 8: εἶς ὁ λόγος ἡ καθ' ἑκάστην (v.l. ἑκαστον) ἕτερος 2 b 5, 14 b 20: ἐν ἀριθμῷ opposed to εἶδει ἐν 15 b 4 and often (cf. 11 b 21): ἐν τῷ ἀνάλογον ἡ τῷ ἀριθμῷ 31 a 21 sq.: ἐντελεχεία μιᾷς opposed to δυνάμει πλείονων 13 b 18—(Platonic) ἡ τοῦ ἐνὸς ἰδέα 4 b 20, νοῦν τὸ ἐν 4 b 22.

εἰσέρχεσθαι 20 a 12.

εἰσέναι 6 b 4, 10 b 29, 20 b 27.

εἶσω 20 a 5, b 26.

εἰωθέναι: εἰωθε λέγεσθαι 7 b 4, παρὰ τὰ εἰωθότα λέγεσθαι 32 a 21.

ἑκαστος: ἑκαστον πρὸς ἑκαστον κρίνομεν 26 b 13—τῶν καθ' ἑκαστον contrasted with τῶν καθόλου 17 b 22, 28, 34 a 17—ἡ αἰσθησις ἐκάστων οὐχ ἡ ἐκαστον ἐκείνων λέγεται 24 a 22, 23—τὸ ἐν ποιοῦν, τοῦτο ὁ νοῦς ἑκαστον 30 b 6 (cf. 25 b 24).

ἐκότερος: διὰ τί τοῦτων ἐκότερον 5 a 9: πρὸς

ἐκότερον αὐτῶν 24 a 6, ἔχει πρὸς ἐκότερον 31 a 23.

ἐκεῖ: opposed to ἐνταῦθα in a metaphorical sense 14 b 21, 23 b 21, 31 b 9 (cf. 13 a 3).

ἐκθλίβειν 4 a 11.

ἐκκρῖνεσθαι 4 a 14.

ἐκλείπειν 24 b 26, 27, 25 a 13.

ἐκπνέειν opposed to ἀναπνεῖν 21 a 2, b 15.

ἐκπνοή opposed to ἀναπνοή 32 b 11.

ἐκστασις 6 b 13.

ἐκτείνεσθαι: ὅταν ἐκταθῇ 29 b 17.

ἐκτὸς τῆς αἰσθήσεως 31 b 4.

ἐλέγχειν 5 b 4.

ἐλεεῖν 8 b 14.

ἐλεος 3 a 17.

ἐλιξ (in the ear) 20 a 13.

ἐλκεν τὴν τροφὴν 12 b 4.

ἐλξίς: joined with ὥσις 33 b 25.

ἐλυτρον 21 b 29.

ἐμβάλλεσθαι 22 a 12.

ἐμμένειν 29 a 4.

ἐμπαλιν: τοῦμπαλιν 16 a 31.

ἐμποεῖν: ψόφον ἐνεργείᾳ 19 b 9—(sc. τὰ σώματα) 24 b 14.

ἐμφαίνεσθαι 13 a 15.

ἐμψυχοῖν: διωρίσθαι τὸ ἐμψυχον τοῦ ἀψύχου τῷ ζῇν 13 a 21, τὸ ἐμψυχον τοῦ ἀψύχου δυοῖν μάλιστα διαφέρειν δοκεῖ, κινήσει τε καὶ τῷ αἰσθάνεσθαι 3 b 25 (cf. 4 b 7): τὸ ἐξ ἀμφοῖν (ὕλης καὶ εἰδους) ἐμψυχον 14 a 17: ἡ οὐσία τῶν ἐμψύχων 15 b 11; τὸ ζῶον σῶμα ἐμψύχον ἐστὶ 34 b 12; τὸ ἐμψυχον ἀν εἰς σῶμα τὸ τρεφόμενον, ἢ ἐμψυχον 16 b 9, 10, ἡ τροφή πρὸς ἐμψυχον ἐστὶ καὶ οὐ κατὰ συμβεβηκός 16 b 11; ποσὺν τι τὸ ἐμψυχον 16 b 13; πᾶν ἐμψυχον ἔχει θερμότητα 16 b 29: ἐξ ἀέρος ἡ ὕδατος ἀδύνατον συστήναι τὸ ἐμψυχον σῶμα 23 a 13 (cf. τὸ σῶμα without ἐμψυχον 35 a 11, 12); τὸ σῶμα ἀπτικτὸν τὸ ἐμψυχον πᾶν 35 a 14; ψόφος ἐμψύχου 20 b 6, δεῖ ἐμψυχον εἶναι τὸ τύπτον καὶ μετὰ φαντασίας τινὸς 20 b 31; τὸ κινήσμενον μέρος καὶ ἐμψυχον 20 a 7: ἐπὶ τῶν σχημάτων καὶ τῶν ἐμψύχων 14 b 30—according to some τῷ ἀπολαμβάνεσθαι τι τοῦ περιέχοντος ἐν τοῖς ζῴοις ἐμψυχα τὰ ζῶα γίνονται 11 a 20.

ἐναμῖος 20 b 10, 21 b 11.

ἐναλλάξ 31 a 27.

ἐναντίος: ἐξ ἐναντίας μεταβαλὼν ἔξεως 17 a 32; φθορά τις ὑπὸ τοῦ ἐναντίου 17 b 3: δοκεῖ εἶναι ἡ τροφή τὸ ἐναντίον τῷ ἐναντίῳ 16 a 22 (cf. 16 a 31, 32, b 6): ἀδύνατον ἅμα τὰς ἐναντίας κινήσεις κινεῖσθαι τὸ αὐτὸ ἢ ἀδιαίρετον 26 b 30 (cf. 27 a 6): δοκεῖ ἡ ἐπιστήμη τῶν ἐναντίων ἡ αὐτὴ εἶναι 27 b 6 (cf. 11 a 3 sq., τῷ ἐναντίῳ πως γνωρίζει 30 b 23): 5 b 24, 25, 7 b 31, 32, 13 a 28, 16 a 23, 18 b 18, 22 b 11, 27 b 4, 30 b 25, 31 a 25, 33 b 5, 6—τοῦναντίον adverbially 11 b 7, 21 a 29; εἰς τάναντία φερόμενα 16 a 6—ἐναντίως 27 a 1.

ἐναντίωσις 5 b 23, 11 a 4, 22 b 23, 26, 29, 24 a 5.

ἐνάργεια 18 b 24.

ἐναργής 3 a 19—ἐναργῶς 28 a 14.

ἐναρμόζειν 14 a 23.

ἐνδέχεσθαι 403 a 9, 11 and often: εἴη ἂν ἐνδεχομένη 28 b 15, ἅπασι ἐνδεχόμενον 7 a 15, ἐνδεχόμενον καὶ ἄλλως ἔχειν 33 a 30.

ἐνδηλος 22 b 33.

ἐνδύεσθαι 7 b 23, 25.

ἐνέειναι 10 a 7, 8, 10, 11, 11 a 16, 17 a 4, 22 b 26, 25 b 24, 30 b 17, 24 (v.l. ἐν εἶναι), 34 a 3, 4, 5 (δύς), 25.

ἐνεκα: τὸ οὐ ἐνεκα διττόν, τὸ μὲν οὐ, τὸ δὲ ᾧ 15 b 2 (cf. 15 b 21): ὁ νοῦς ἐνεκά του ποιεῖ καὶ ἡ φύσις 15 b 16 (cf. 33 a 14), ἐνεκά του ἡ κίνησις αὐτῇ 32 b 15, ἡ δρεξις 33 a 15, πάντα τὰ φύσει 34 a 31, συμπτώματα τῶν ἐνεκά του 34 a 32; ἐνεκα τοῦ εὖ 20 b 20, 34 b 24, οὐ τοῦ εἶναι ἐνεκα ἀλλὰ τοῦ εὖ 35 b 21; οὐ ἐνεκα 15 b 11, 20 b 23, (ἐνεκεν) 15 b 15; τίνος ἐνεκα 25 b 4—3 a 27, b 6, 6 b 10, 15 b 1, 20.

ἐνέργεια: δοκεῖ ἐν τῷ πάσχοντι ἡ τῶν ποιητικῶν ὑπάρχειν 14 a 12 (cf. 26 a 5); πρότερον τῶν δυνάμεων 15 a 19; ἡ τοῦ αἰσθητοῦ καὶ τῆς αἰσθήσεως 25 b 26 (cf. 26 a 11, 16), τῆς αἰσθήσεως 28 b 13 (cf. 28 b 26), τοῦ ψοφητικοῦ 26 a 6, τῆς οἴψως, τοῦ χρώματος, τοῦ γευστικοῦ 26 a 14, τοῦ χυμοῦ 26 a 15, τοῦ διαφανοῦς 18 b 9, οὖον ἐνέργεια τοῦ δεκτικοῦ 14 a 9, ἡ ἀπλῶς 31 a 7, ἡ τοῦ ἀτελοῦς 31 a 7 (cf. 17 a 16); τῇ οὐσίᾳ ὧν ἐνέργεια 30 a 18, κίνησις τις ἡ ἐνέργεια (vv.11.) 33 b 18, ἥτοι δύναμις ἡ ἐνέργεια 28 a 6: μεταβάλλει εἰς ἐνέργειαν ἐξ ἀργίας 16 b 2: τὰ ποιητικὰ τῆς ἐνέργειας 17 b 20: ἐνέργεια 17 a 18, 19 b 9, 28 a 9, 29 a 24, 30 b 8, 31 b 14, opposed to δυνάμει 17 a 7, 13, 14, 19 b 5, 22 a 18, 24 a 2, 8, 30 a 17, b 7, 25, 31 a 5: κατ' ἐνέργειαν 17 b 19, 22, 18 b 1, 19 a 10, b 9, 20 a 27, 25 b 28 (δύς), 31 (δύς), 29 a 2, b 6, 31 a 12, b 17, opposed to κατὰ δύναμιν 26 b 3, 24, 30 a 20, 31 a 1.

ἐνέργειαν 12 a 26, 16 b 19, 17 a 15, b 1, 28 a 13, 29 b 7, 31 a 10, τὸ ἥδη ἐνεργοῦν 17 a 12, ὅταν ἐνεργῇ 25 b 29: ἐνεργεῖσθαι 27 a 7.

ἐνιστάται 32 b 8.

ἐννοεῖν 30 b 10.

ἐνοποιεῖν: τὸ ἐνοποιοῦν 10 b 11 (cf. τὸ ἐν ποιοῦν 30 b 5).

ἐνσημάλινεν 23 a 4.

ἐνταῦθα 28 b 20, opposed to ἐκεῖ 14 b 22, 23 b 21, 31 b 9: τῶν ἐνταῦθα 28 b 20.

ἐντελέχεια: ἐν τῷ δυνάμει ὑπάρχοντι καὶ τῇ οὐσίᾳ ὅλη 14 a 25; τοῦ δυνάμει ὄντος λόγος 15 b 15 (cf. 14 a 27); ἡ πρώτη 12 a 27, b 5; τὸ κυρίως (ἐν καὶ ὄν) ἐντελέχεια 12 b 9, ἡ τμήσις, ἡ ἔκστασις, ἡ ἐργηγορία 12 b 28; τοιοῦτου σώματος 12 a 21 (cf. 13 a 7, 8, 14 a 18), τῶν μερῶν αὐτῶν 13 a 6, τοῦ διαφανοῦς 19 a 11; ἡ οὐσία ἐντελέχεια 12 a 21, τὸ εἶδος 12 a 10, 14 a 17: ἐντελέχεια contrasted with δύναμις 2 a 26, 12 a 10, 17 a 21, b 5, 7, 31 b 25, with δυνάμει ὄν 17 b 10: ἐντελεχέειν ὄν 31 a 3, ὑγρὸν 22 b 1: ἐντελεχέειν contrasted with δυνάμει 13 b 18,

17 a 9, 29, b 4, 13, 18 a 4, b 12, 30, 22 b 16, 29 a 28, b 31, 30 a 1, 31, b 26.

ἐντεῦθεν 26 b 24.

ἐντομος: τὰ ἐντομα 11 b 20, 13 b 20.

ἐντός: ἐπὶ τοῦ μυκτῆρος ἐντός 21 b 16: πότερον ἐστὶ τὸ αἰσθητήριον ἐντός ἢ οὐ, ἀλλ' εὐθέως ἡ σὰρξ 22 b 34 (cf. 22 b 23, 23 b 23): θερμότητα τὴν ἐντός 20 b 21 (cf. ἔσω 8 b 25).

ἐνυδρος: τὰ ἐνυδρα τῶν ζώων 19 a 35, 21 b 10.

ἐνυλος: λόγοι ἐνυλοι 3 a 25.

ἐνυπάρχειν 4 a 14, 11 a 23, b 25, 13 a 15, 23.

ἐξέρχεσθαι 6 b 3, 11 b 8, 19 b 17.

ἐξείναι 35 a 6.

ἔξις 17 a 32: τὰς ἔξεις καὶ τὴν φύσιν contrasted with τὰς στερητικὰς διαθέσεις 17 b 16: δύναμις ἡ ἔξις 28 a 3: ἔξεις καὶ πάθη 32 a 6: ἔξις τις, οἷον τὸ φῶς 30 a 15 (cf. 18 b 19).

ἐξίστασθαι 6 b 13.

ἔξω: ἄνευ τῶν ἔξω 17 a 4: κινουμένου τοῦ ἔξω οὐ εἰςω κινεῖται 20 a 5—preposition ἔξω τοῦ ἡλιουμένου 19 b 30, ὕδατος καὶ ἀέρος 25 a 8, γῆς 35 a 15.

ἔξωθεν 17 b 20: τῶν ἔξωθεν 17 a 28, b 28.

ἐοικέναι: εἰκοε 402 b 16 and often: εἰοικεν ὅτι 20 b 8.

ἐπανίεναι 3 b 16, 12 a 4.

ἐπεισιέναι 4 a 13.

ἐπέρχεσθαι 13 a 13.

ἐπεσθαί 6 b 4, 28 a 20, τῶν κοινῶν καὶ ἐπομένων τοῖς συμβεβηκόσιν 28 b 22.

ἐπίδοσις 17 b 7.

ἐπιζητεῖν 2 a 7, 11 a 11, 15 a 16.

ἐπίτηρος (Emped.) 10 a 4.

ἐπιθυμῶν 3 a 7, 11 a 28, b 6, 33 a 7, 35 b 23.

ἐπιθυμητικὸς 7 a 5, 32 a 25, 33 b 4.

ἐπιθυμία 13 b 24, 14 b 5, 34 a 2, 3: δρεξις τις 33 a 25, 14 b 2, τοῦ ἡδέος δρεξις 14 b 6:

πέινα καὶ δίψα ἐπιθυμία 14 b 12: ἐν τῷ ἀλόγῳ 32 b 6: κατὰ τὴν ἐπιθυμίαν πράττει 33 a 3: ὁ λόγος καὶ αἱ ἐπιθυμίαι ἐναντία 33 b 6: ἀνθέλκειν κελεύει διὰ τὸ ἥδη 33 b 8.

ἐπικάλυμμα 22 a 2.

ἐπικαλύπτειν 29 a 7.

ἐπικρίνειν 31 a 20.

ἐπιλανθάνεσθαι 28 b 6.

ἐπίπεδον 2 a 22, b 19, 3 b 19, 20 a 2 (δύς): (Platonic) 4 b 23.

ἐπίπικρος 7 b 2.

ἐπισκέπτεσθαι 5 b 31, 9 b 23, 14 a 1, b 16, 30 a 6, 32 b 12.

ἐπισκοπεῖν 3 b 20, 6 a 11.

ἐπίστασθαι 14 a 5, 6, 17 a 29.

ἐπίστασις 7 a 33.

ἐπιστήμη: ἔξις, καθ' ἣν κρίνομεν καὶ ἀληθεύομεν ἢ ψευδόμεθα 28 a 5, τῶν αἰετῶν ἀληθευόντων 28 a 17: with φρόνησις and δόξα ἀληθῆς included under τὸ νοεῖν ὁρθῶς 27 b 10, under ὑπόληψις 27 b 25:

distinguished from θεωρεῖν 12 a 10, 22, 23, προτέρα τῇ γενέσει 12 a 27, contrasted

with *αίσθησις* 17 b 23, as *ἐπιστάμεθα* distinguished from *ψυχή* 14 a 5: *μορφή* καὶ *εἶδος* τοῦ *ἐπιστημονικοῦ* 14 a 8, τὰ *ἐπιστημικά* πῶς 31 b 22: ἡ *ἐπιστήμη* ἡ *θεωρητική* καὶ τὸ οὕτως *ἐπιστητὸν* τὸ αὐτὸ 30 a 4 (cf. 30 a 2, 31 a 1): *τέμνεται εἰς* τὰ *πράγματα* 31 b 24: αἱ *ἐπιστήμαι* τῶν *αἰσθητῶν* 17 b 26: *ποιεῖν κατὰ* τὴν *ἐπιστήμην* 33 a 5, *παρὰ* τὴν *ἐπιστήμην* 33 a 11—17 a 24, b 6, 12, 18, 27 b 6, 33 a 6—(Platonic) 4 b 26, *ἐπιστήμην* τὰ *δύο* 4 b 22.

*ἐπιστημονικός* 14 a 10, 31 b 27, 34 a 16. *ἐπιστήμων* 17 a 22, 23, 24, 25, 30, 29 b 6. *ἐπιστήτῶς* 30 a 5, 31 b 23, 27. *ἐπιτάττειν* 33 a 1. *ἐπιτιθέναι* 19 a 29, 23 b 24, 25. *ἐπιχειρεῖν* 7 b 20, 9 b 15. *ἐπομένως* 5 a 3. *ἔπος*: τοῖς *Ὀρφεοῖς* *ἔπει* *καλουμένοις* 10 b 28.

*ἐπωνυμία* 17 b 11. *ἐργάζεσθαι* 16 a 13, b 28. *ἔργον*: *φύσεις* 34 b 1, *τῆς ψυχῆς* distinguished from *πάθος* 3 a 10, joined with *πάθος* 3 b 12, 8 a 4, 9 b 15: *λογισμοῦ ἔργον* 34 a 8: τοῖς *κοινοῖς σώματος* καὶ *ψυχῆς ἔργοις* 33 b 20—2 b 12, 14, 15 a 26, 27, 16 a 5, 21, 20 b 17, 32 a 16.

*ἔρια* 19 b 6, 15. *ἐρμηνεῖα* 20 b 19. *ἐρωτᾶν* 6 b 22. *ἔστιν ὡς* 17 a 18, 19, 25 b 22, 26 a 28 (*δὲ*), 27 a 3, 4, 14.

*ἔσχατον*: τὸ *ἔσχατον αἰσθητήριον* 26 b 16 (cf. 31 a 19): τὸ *ἔσχατον* (τῶν *ὠθημένων*) 34 b 33: τὸ *ἔσχατον ἀρχὴ* τῆς *πράξεως* 33 a 16: exterior surface 23 a 27, b 22. *ἔσω* 8 b 25.

*ἐτερομήκης* 13 a 17. *ἐτέρω* ἢ *ἐτέρως* *ἔχοντι* 29 b 20: *ἐτέρως* *κινεῖ* τὴν *αἰσθησιν* 27 a 1. *ἐτέρωθι* 4 b 2. *ἐτέρως* 27 a 1. *εὐ* 29 a 27: τὸ *εὐ* 20 b 22: *ἔνεκα* τοῦ *εὐ* 20 b 20, 34 b 24, 35 b 21.

*εὐδιδρίστος* 21 a 7. *εὐεξέταστος* 8 a 10. *εὐθρυπτος* 20 a 8. *εὐθύνα* 7 b 29. *εὐθυπορεῖν* 7 a 29. *εὐθύς*: τὸ *εὐθύ* 2 b 19, 3 a 13 (*δὲ*), 15, 11 a 5, 7, 29 b 18, 20 (*δὲ*)—*εὐθέως* 21 b 31, 22 b 34, 23 a 3: *εὐθύς* *adverb* 27 b 22, 32 a 23.

*εὐθυωρία* 6 b 31. *εὐκνηγτότατος* 5 a 12. *εὐλαβεῖσθαι* 2 b 5, 3 b 24. *εὐλογος* 6 a 30, 8 a 10, 34, 10 b 14, 21 a 13, 29 a 25—*εὐλόγως* 2 a 4, 20 b 11, 15, 33 a 17.

*εὐμαρής* 3 a 1. *εὐπορεῖν* 3 b 21. *εὐρεῖν* 29 b 9. *εὕρεσις* 13 a 19. *εὐστερνος* (Emped.) 10 a 4.

*εὕρηκτος* 22 a 19. *εὐφύης* 21 a 24, 26. *εὐώδης* 21 b 23. *ἐφαρμύζειν* 8 a 5, 14 b 23. *ἐφεξῆς*: τῷ *ἐφεξῆς* 7 a 8, 14 b 29, 33: τὰ *ἐφεξῆς* 14 b 22. *ἐφ' ἡμῶν* 27 b 18, 20 (cf. *ἐπ' αὐτῷ* 17 b 24, 25).

*ἔχειν*: *ἔλκεν* 30 a 6, *εἶδος* καὶ *μορφήν* 7 b 23, *τέλος* 7 a 27, *θέσιν* 9 a 6, 7, *κίνησιν* καὶ *θέσιν* 8 a 7, *βάθος* 23 a 22, *ἀρχὴν* *κινήσεως* καὶ *στάσεις* 12 b 16, *δύναμιν* καὶ *ἀρχὴν* 13 a 26, *δύναμιν* 14 a 28, *μηθὲν* *κοινὸν* 29 b 24, *μεμειγμένον* *τι* 29 b 28, *διάστασιν* 32 a 28, *τὸν αὐτὸν λόγον* 8 a 14, *τοῦνομα* 35 a 18, *ἐπωνυμίαν* 17 b 11, *ἀέρα* 20 a 6, 19, *θερμότητα* 16 b 29 (cf. 20 b 24), *ὕγρότητα* 22 a 18, *ὕδωρ* 23 a 25, 27, *μεσότητά* 24 b 1, *αἰτίαν* *τοῦ εἶναι* *δρατὸν* 18 a 31, *χρῶμα* 19 a 12, 24 a 22, 25 b 19, *ψόφον* 19 b 6, 7, *φωνήν* 25 b 29, *ὁσμήν* 19 a 34, 21 b 7, *χυτὸν* 21 a 27, 22 a 30, *διαφορὰν* *τῶν ἀπτόων* 24 a 13; *ψυχὴν* 5 a 20 and often, *μόριον* *ψυχικόν* 24 a 33, *θρεπτικὴν* *ψυχὴν* 34 a 22, *ζωὴν* 12 a 13 (*δὲ*), 17, 20, 28, *γένεσιν* 15 a 28, *αὔξησιν* 16 a 23, *ἀκμὴν* καὶ *φθίσιν* 32 b 25, 34 a 24, τὸ *κατὰ* *τόπον* *κινήτικόν* 15 a 7, τὸ *αἰσθάνεσθαι* 17 b 18, *αἰσθησιν* 11 b 22 and often, *ἀφ' ἧν* 14 a 3 and often, *ὅσων* 15 a 5, *ἀκοὴν* 25 b 28, *γεῦσιν* 21 a 18, *αἰσθητήριον* 24 b 32, 25 a 2, 9, *ὄργανα* 11 b 23 (cf. 32 b 18, 25), *ὀφθαλμοὺς* 25 a 11, *φράγμα* 21 b 28, 31, *ἐπικάλυμμα* 22 a 2, *φάρυγγα* 21 a 4, 5, *τὴν ἐκ συλλογισμοῦ* (*φαντασίαν*) 34 a 11, *δόξαν* 28 b 5, 7, 34 a 11, *ὕπληψιν* 28 b 3, *ἐπιστήμην* 17 a 24, b 5, *γραμματικὴν* 17 a 25, *λατρικὴν* 33 a 4, *ὄρεξιν* 33 a 8, *λόγον* 32 a 31, *διάνοιαν* 10 b 24, *νοῦν* 29 a 6, 34 b 3, 5, τὰ *ἐλημένα* 28 b 30—*ψεῦδος* 28 b 19: *ἀπορία* 3 a 3 and often, *ὕπερναυτώσεις* 9 b 22, *δυσχερείας* 10 a 27, *διαφορὰν* 16 b 4, 18 a 14, *λύσιν* 22 b 27, *διάνοιαν* 4 a 17, τὸ *βουλευτικόν* ἢ *ὄρεξις* 34 a 12—*ἔχονται* αἱ *αἰσθήσεις* 25 a 9—*ἔξομεν* *λέγειν* 2 b 25, 22—with object unexpressed *ἐὰν πεφύκος* *μὴ ἔχη* ἢ *φαύλως* 22 a 28: contrasted with *ἐνεργεῖν* 12 a 26—τὸ *ἔχον* 3 a 4, 28 b 17 (cf. τὸ *ἔχον* *ταύτην* *σῶμα* 16 b 22, 18), opposed to *ἀποβεβληκός* 12 b 26, *τοῦ ἔχοντος* *ἐκείνου*, ἢ *ἐκείνο* *ἔχει* 8 b 27—*ἐχόμενα* 22 b 12, *τῶν ἐχομένων* 15 a 15—intransitive οὕτως *ἔχει* 3 a 25 and often; *ὡς δύναμις* *πρὸς ἐντελέχειαν* 17 b 5, *πρὸς ἐκάτερον* *ὡς ἐκείνα* *πρὸς ἀλλήλα* 31 a 23, *ὡς ἡ κεκλασμένη* *πρὸς αὐτὴν* *ὅταν ἐκταθῇ* 29 b 17 (cf. 23 b 19): *ὁμοίως* *ἔχει* 15 b 26, 17 b 26, 19 a 30, 23 a 29, b 10, 26 b 12, 29 a 16, *ὡσαύτως* 27 b 23, *παραπλησίως* 14 b 28, *ἀλλως* 29 b 13, 33 a 30, *ἐτέρως* 29 b 21, *ὅπως* *οὖν* 10 a 1, *πῶς* 7 b 16, *καλῶς* 17 b 8, *ἀνὰ* *λογον* 20 b 1, 21 a 17.

*ἔως* 4 a 16, 13 a 30: *μέχρι* *τούτου*, *ἔως* *ἐβαψεν* 35 a 3.

ζέσις 3 a 31.

ζῆν : διαρίσθαι τὸ ἐμψυχον τοῦ ἀψύχου τῷ ζῆν 13 a 22 : τοῦ ζῆν πλεοναχῶς λεγομένου, κἂν ἐν τι τοῦτων ἐνυπάρχῃ μόνον, ζῆν αὐτὸ φαμεν 13 a 22, 23 (cf. 11 b 3) : τὸ ζῆν διὰ τὴν ἀρχὴν ταύτην (τὴν θρεπτικὴν) ὑπάρχει τοῖς ζῴσι 13 b 1, 2 (cf. 15 a 25, 34 a 23), τὸ ζῆν τοῖς ζῴσι τὸ εἶναι ἔστιν 15 b 13, φαίνεται τὰ φυτὰ ζῆν 10 b 23 (cf. 13 a 26, 30), ἔχοντα αἰσθησιν ζῶα λέγομεν καὶ οὐ ζῆν μόνον 13 b 4, ταύτη (τῇ ἀφῇ) ὥρισταί τὸ ζῆν (sc. τῷ ζῶν) 35 b 16 : ὃ ζῶμεν διχῶς λέγεται 14 a 4, ἡ ψυχὴ τοῦτο ὃ ζῶμεν 14 a 12—τοῦ ζῶντος σώματος 12 b 23, 15 b 8 (cf. 12 b 5, 6)—τὰ ζῶντα, including both plants and animals 14 b 8, 15 a 27, b 22, 34 a 27 ; πολλὰ διαιρούμενα ζῆ 9 a 9, 11 b 19, 13 b 17—τὰ δὲ (τῶν ζῶν) μόνη φαντασία ζῶσιν 15 a 11—(Atomists) τοῦ ζῆν ὅρον εἶναι τὴν ἀναπνοὴν 4 a 9, 15—ζῆν derived from ζεῖν 5 b 28.

ζῆτείν 2 b 10 and often.

ζήτημα 2 a 12.

ζήτησις 3 b 24.

ζοφερός 26 b 1.

ζωή : ζῶν λέγομεν τὴν δι' αὐτοῦ τροφήν τε καὶ αὔξησιν καὶ φθίσιν 12 a 14—12 a 13, 15, 17, 20, 28, 15 b 28, 16 b 9.

ζῶν : τὸ ζῶν τὸ καθόλου 2 b 7 ; τί ποιήσει διαφορὰν τῶν ζῶν 14 a 1 ; ἡ ψυχὴ καὶ τὸ σῶμα ζῶν 13 a 3, σῶμα ἐμψυχον 34 b 12 : τὸ ζῶν διὰ τὴν αἰσθησιν πρῶτως 13 b 2 (cf. 13 b 3, 4, 27 b 12 sq., 34 a 30) ; οὐχ οἶδν τε ἀνευ ἀφῆς εἶναι ζῶν 34 a 29, b 13, 14, 17-19, 24, 35 b 5 sq., 17 (cf. 13 b 8, 9, 14 b 3, a 3) ; οὐχ οἶδν τε ἀπλοῦν εἶναι τὸ τοῦ ζῶντος σῶμα 35 a 11, 34 b 10 (cf. 35 a 20, 23 a 12 sq.) ; πολλὰ τῶν ζῶντων οὐτ' ὄψιν οὐτ' ἀκοὴν οὐτ' ὄσμησιν αἰσθησιν ἔχουσιν 15 a 5 ; ζῶα τινα μόνιμα κατὰ τύπον 10 b 20, 32 b 20 (cf. 34 b 2), οὐ πάντα ἀναπνεύουσιν 11 a 1 (cf. 19 b 1, 2, 21 b 20), πολλὰ οὐκ ἔχουσι φωνὴν 20 b 9, φαίνεται πολλὰ διάνοιαν οὐκ ἔχειν 10 b 24 (cf. 29 a 6, 33 a 12), ἐν τοῖς ἄλλοις ζῴσι οὐ νόησις οὐδὲ λογισμός ἐστιν, ἀλλὰ φαντασία 33 a 12 (cf. 15 a 8 sq.), τῆς αἰσθητικῆς φαντασίας μετέχουσι 33 b 30, 34 a 6, ἐνίοις δ' ἀόριστως ἔνεστιν 33 b 31—34 a 5 : ἐνια τῶν ἐντόμων διαιρούμενα ζῆ 11 b 20, 9 a 9, 13 b 20 : τὰ ἐνυδρὰ τῶν ζῶντων 19 a 35, τὰ ἐν τῇ ὕδατι ζῶα 23 a 31, ζῶα ἀτελῆ καὶ πεπρωμένα 25 a 9 sq., 32 b 22 sq. (cf. 15 a 27), τοῖς λογιστικοῖς (ζῴσι) 34 a 7 : ζῶν (ποιεῖ) ζῶν 15 a 29—(Xenocrates) συμβαίνει κινεῖσθαι ὑπὸ τοῦ ἀριθμοῦ 9 b 7 (cf. 9 b 11).

ῆ : answered by ταύτη 15 b 5, 27 a 10, 33 b 27, 35 b 12 : τῷ εὐθεῖ, ἡ εὐθὺν and the like 3 a 13, b 10, 18 b 10, 22 b 3, 23 b 27, 24 b 25, 26 b 9, 33 b 11 : τὸ αἰσθητικόν, ἡ τοιοῦτον and the like 12 b 25, 16 b 18, 18 a 23, 31 a 11 (cf. 24 a 24)—3 b 12, 14, 15, 18, 5 a 23, 24, 15 a 29, 16 b 6, 7, 10, 12, 13, 18 b 7 (δὲ),

24 a 21, 23, b 9, 25 a 31 (δὲ), 26 b 30, 27 a 4, 11, 12, 13, 14, 29 b 25, 30 b 16, 17, 31 b 13, 14, 33 b 17—whereby, ἡ καὶ δῆλον 23 b 22, 26 b 15—where, (Emped.) 30 a 29.

ἡδεσθαι 31 a 10.

ἡδῆ 3 a 27, 9 a 7, 12 a 8, 16 b 16, 17 a 12, 25, 28, b 18, 18 a 4, 20 b 16, 25 a 27, 28 b 20, 25, 30 a 28, 32 b 30, 33 b 19, 34 a 8, 15, 19, b 25 : τὸ ἡδῆ 33 b 8, τὸ ἡδῆ ἡδὺ 33 b 9.

ἡδονὴ 9 b 16 : ὅπου αἰσθησις, καὶ λύπη τε καὶ ἡδονή, ὅπου δὲ ταῦτα, ἐξ ἀνάγκης καὶ ἐπιθυμια 13 b 23, 14 b 4 (cf. 34 a 3).

ἡδὺς 26 b 3, 5, 31 a 9, 32 b 31, 33 a 1, b 9 : τὸ ἡδὺ 14 b 5, 6, 21 a 12, 31 b 9, 33 b 9, 35 b 23.

ἡδυσμα 14 b 13.

ἡλικία 17 b 32.

ἡλιος 5 b 1, 28 b 3.

ἡλιούμενος 19 b 31.

ἡμισυς 30 b 10, 12.

ἦν : is, as we saw, 8 b 28, 19 a 9, 24 a 11, 31, 31 a 7.

ἡμεμεῖν 4 a 12, 6 a 24, 25, 33 b 24, 34 a 20 : τὸ ἡμεμεῖν 25 a 18.

ἡρέμεσις 6 b 22, 7 a 32.

ἡρεμία 6 a 24, 27, 18 a 17.

ἡχεῖν 20 a 16, 19.

ἡχῶ 19 b 28 : πότε γίνεται 19 b 25.

θαρραλέος 27 b 22, 24.

θαρρεῖν 3 a 7, 8 b 2.

θάροςος 3 a 17.

θαυμασιώτερος 2 a 3.

θεᾶσθαι 27 b 24.

θεῖον, sulphur, 21 b 25.

θεῖος : τὰ θεῖα 5 a 32, τοῦ δὲ καὶ τοῦ θεῖου 15 a 29, b 3, ὁ νοῦς θεϊοτέρων τι 8 b 29.

θεὸς 2 b 7, 7 b 10, 9 b 32, 10 b 5, 11 a 8.

θερμαίνεω 24 b 1.

θερμαντός 26 b 6.

θερμός 4 a 1, 31 a 20 : contrasted with ψυχρός 5 b 25, 14 b 8, 12, 22 b 26, 23 b 28, 24 a 3, 10, 29 a 26, b 15, 35 a 23, b 14 : τὸ θερμόν 3 b 1, 5 b 27, 16 b 29, 20 b 25.

θερμότης 16 b 29, 20 b 20, 25 a 6.

θέσις 8 a 7, 9 a 6, 7, 21.

θεωρεῖν : joined with γινῆναι 2 a 7, with νοεῖν 8 b 24 ; contrasted with ἐπιστήμη 12 a 11, 23, with ἔχειν (ἐπιστήμην) καὶ μὴ ἐνεργεῖν 12 a 25, 17 a 28, 29 : illustrating τὸ κατ' ἐνέργειαν αἰσθάνεσθαι 17 b 19—2 b 17, 3 a 28, 12 b 17, 15 a 21, 17 b 5, 32 a 8, 9, b 29, 33 b 20.

θεωρητικός : νοῦς 15 a 11, 32 b 27, 33 a 15,

δύναμις 13 b 25, ἐπιστήμη 30 a 4,

νοήσις 7 a 25.

θηρίον : τῶν θηρίων ἐνίοις φαντασία μὲν ὑπάρχει, λόγος δ' οὐ 28 a 23 (cf. 28 a 10), οὐθενὶ ὑπάρχει πλῆστις 28 a 21, οὐκ ἔχει νοῦν 29 a 6—14 b 33.

θιγγάνειω 23 a 2—(of ὁ νοῦς considered as a circle) 7 a 16, 18.



θίσις: ἡ τοῖς μορίοις 7 a 18, τὴν τοῦ ἀνομοίου 27 b 4.

θνήσκειν: τὰ τεθνεῶτα τῶν ζώων 6 b 5.

θνητός: τὰ θνητὰ 10 b 6, 13 a 32.

θρεπτικός: θρεπτικὸν λέγομεν τὸ τοιοῦτον μόριον τῆς ψυχῆς οὐ καὶ τὰ φυόμενα μετέχει 13 b 7, 12, 14 a 31, 32 b 15 (cf. 14 a 33, 32 a 29, 34 a 22, 26); ἡ θρεπτικὴ ψυχὴ καὶ πρώτη καὶ κοινωτάτῃ δύναμις, καθ' ἣν ὑπάρχει τὸ ζῆν ἅπασιν 15 a 23: τὸ θρεπτικὸν 13 b 5, 15 a 17; τοῦ αἰσθητικοῦ χωρίζεται ἐν τοῖς φυτοῖς 15 a 2; ἀνευ τοῦ θρεπτικοῦ τὸ αἰσθητικὸν οὐκ ἔστω 15 a 1; ὑπάρχει δυνάμει ἐν τῷ αἰσθητικῷ 14 b 31; τὸ γεννητικὸν καὶ θρεπτικὸν 32 b 11 (cf. 16 a 19)—τοῦ ἀπτικοῦ καὶ θρεπτικοῦ (i.e. τῆς τροφῆς) αἰσθησιν 34 b 22 (cf. 14 b 6, 7).

θρίξ: ἄλλως γῆς, οὐθενὸς αἰσθάνεσθαι δοκεῖ 10 b 1, 35 a 24 sq.

θρύπτειν 19 b 26, 20 a 8.

θρύψις 19 b 23.

θυμικός 32 a 25, 33 b 4.

θύμον, thyme, 21 b 2.

θυμός 3 a 17, b 18; ὁρεῖς τις 14 b 2, ἐν

τῷ ἀλόγῳ 32 b 6.

θύραθεν 4 a 13.

θυρίς 4 a 4.

ἰᾶσθαι 33 a 4.

ἱατρικὴ 33 a 4.

ἱατρός 3 b 14.

ἰδέα 4 b 20.

ἰδίος: τῶν κατὰ συμβεβηκός ἰδίων 2 a 15, ἰδία πάθος τῆς ψυχῆς 2 a 9, 3 a 4, 8, 11, 12, μόριον τῆς ψυχῆς 32 a 21, εἶδος καὶ μορφήν 7 b 23, στω. γέν. καὶ ἀρχὰς 10 a 19, λόγος 14 b 24, 26, τὸ ἀποπν. 9 b 1, ἰδίον ἐπὶ τῶν ἀνθρώπων 21 b 19, ἀδύνατα 8 b 34, τῶν κοινῶν αἰσθητήριον 25 a 14, αἰσθησιν 25 a 21, 28; opposed to ἀλλότριος of ψόφος 20 a 18: ἰδίον αἰσθητὸν contrasted with τὰ κοινὰ 18 a 10, 17, 19, 25 a 19, 30, 27 b 12, 28 b 18, 23, 30 b 29, λέγω δ' ἰδίον δ μὴ ἐνδέχεται ἐτέρῳ αἰσθῆσαι αἰσθάνεσθαι, καὶ περὶ δ μὴ ἐνδέχεται ἀπατηθῆναι 18 a 11, τῶν καθ' αὐτὰ αἰσθητῶν τὰ ἰδία κυρίως ἐστὶν αἰσθητά, καὶ πρὸς αὐτὰ ἡ οὐσία πέφυκεν ἐκαστης αἰσθήσεως 18 a 24—ἰδίως 25 a 7.

ἱππος 2 b 7.

ἰσόπλευρος 13 a 18.

ἱστορία 2 a 4.

ἰσχυρός: πάθημα 3 a 19—of sensibles 21 b 24, 22 b 8, 26 b 2, 29 b 2; κίνησις ἰσχυροτέρα τοῦ αἰσθητηρίου 24 a 30.

ἰσως (modeste asseverantis) 5 b 31, 8 b 9, 13, 20, 29, 9 b 29, 11 a 8, 30 b 18.

ἰχθύς 19 a 5, 20 b 10, 21 a 4.

καθάπερ: introducing a sentence with verb or predicate expressed εἰπομεν, εἰρηται, φασί and the like 7 b 4, 8 a 31, 9 a 31, b 8, 10 a 2, 13 b 28, 14 a 15, 30, 16 b 34, 17 a 17, 19, 18 a 4, 20 b 30, 23 b 2, 8, 30 a 28: elliptical, requiring the preceding verb or predicate to be

understood ἀπεφάναντο, καθάπερ "Ἰππων (ἀπεφάναντο) 5 b 2, ἄλλαι ἄλλων ἀρχαί, καθάπερ ἀριθμῶν καὶ ἐπιπέδων (ἄλλαι ἀρχαί) 2 a 22, εἰς ὃ λόγος αὐτῆς ἐστί, καθάπερ ζῶον (εἰς ὃ λόγος ἐστί) 2 b 6, 50 5 b 6, 8 b 23, 10 a 27, 12 b 11, 21, 13 b 17, 14 a 5, 16 a 30, 19 b 29, 20 b 17, 22 a 14, 25, followed by οὕτω 15 b 19: elliptical, requiring apodosis with fresh verb or predicate to be supplied καθάπερ τῷ εὐθεῖ, ἡ εὐθύ, πολλὰ συμβαίνει (οὕτως ἔχει καὶ τὰ περὶ τὴν ψυχὴν, cf. 20 b 22) 3 a 12, διὸ καθάπερ τὸ καυστὸν οὐ καίεται (οὕτω συμβαίνει περὶ τὸ αἰσθητὸν καὶ τὸ αἰσθητικόν) 17 a 7.

καθεύδω 17 a 11.

καθόλου: τῶν καθόλου 17 b 23; ζῶων τὸ καθόλου 2 b 7, ἡ καθόλου ὑπόληψις 34 a 17, 20, τοῖς καθόλου λόγοις 17 a 1; καθόλου εἰρηται 12 b 10, καθόλου περὶ πάσης ψυχῆς 10 b 26, περὶ πάσης αἰσθήσεως 24 a 17.

καθอรᾶν 2 b 20.

καί: explicative 2 a 24, 4 a 1, 17 a 27, 24 a 24 and often: in fact, 12 a 16 (v.l.) and often—καὶ ταῦτα, and this too, 11 a 11.

καίειν 17 a 8 (δύς).

καίρος 17 b 29.

κακός: contrasted with ἀγαθός 26 b 25, 31 a 11, 16, b 11; πῶς τὸ κακὸν γνωρίζει 30 b 22.

καλεῖν: καλεῖσθαι=δομαζεσθαι 5 b 29, ἣν καλοῦσι τινες στιγμὴν 27 a 10; τὰ καλούμενα ζῷα 4 a 3, τοῖς Ὀρφικοῖς ἔπειτα καλουμένοις 10 b 28, ὁ καλούμενος νοῦς 7 a 4, 29 a 22, 32 b 26, ἡ καλουμένη ἀφή 23 b 30, ὁρεῖς 33 a 31, ἀρητηρία 20 b 28.

καλός 2 a 1: καλῶς 2 b 25, 3 b 23 (δύς), 4 b 2, 7 a 2, 11 a 26, 14 a 19, 15 b 28, 16 a 2, 17 b 8, 19 a 15, 26 a 20.

κάμνειν 16 a 25, 20 a 14, 15, 22 b 8.

καμπύλος contrasted with εὐθύς 2 b 19, 11 a 5, 6.

κᾶν: (=καὶ ἐν) 17 b 26, 30 b 17: (=καὶ ἐὰν in protasis) 4 a 20, 13 a 22, 17 a 11, 27 b 22: (=καὶ ἂν in apodosis) 6 a 22, 25 b 8, 29 a 26, 32 b 17, 18—κᾶν εἰ (ἂν anticipatory) 2 b 8, 6 a 23, 8 b 12, 22 a 11, 23 b 9, 26 b 19, 32 a 21.

καρῶν 11 a 6.

καρδία 3 a 31, 8 b 8, 20 b 26, 32 b 31.

καρπός 12 b 3, 27.

κατά: limiting ὁ κατὰ φρόνησιν νοῦς 4 b 5, 12 b 10, 17 b 10, 24 a 24, 26 a 3, 4, 30 b 18 and often: καθ' αὐτὸ 12 a 7, 17 a 8, opposed to καθ' ἕτερον 6 a 5, 7, 11 (cf. τὸ καθ' αὐτὸ ὁρατὸν 18 a 30, b 5), opposed to κατὰ τὰ συμβεβηκτά 17 a 5, τὸ καθ' αὐτὸ αἰσθητὸν opposed to τὸ κατὰ συμβεβηκός 18 a 8, 24: καθ' ἕτερον 6 a 4: κατ' ἄλλο 29 b 27.

κατακάμπτειν 6 b 31.

κατάξησης 2 b 5.

καταφάναι: καταφᾶσα ἡ ἀποφᾶσα 31 a 9.

κατάφασις 30 b 27.  
 καταχρησθαι 20 b 17.  
 κατάψυξις 5 b 29.  
 κατέχουν: χώραν 9 a 23, τὸν ἀέρα, τὸ πνεῦμα 21 a 3 (δύς), b 15.  
 κατηγορεῖσθαι 2 b 8.  
 κατηγορία 2 a 25, 10 a 15.  
 κάτω contrasted with ἄνω 6 a 28, 13 a 29, 15 b 29, 16 a 2, 3.  
 καῦμα 3 b 5.  
 καυστικός 17 a 8.  
 καυστός 16 a 16, 17 a 7.  
 κείσθαι (Homer) 4 a 30.  
 κεκλασμένη (sc. γραμμῇ) 29 b 16.  
 κελεῖν (of νοῦς) 32 b 30, 31, 33 b 8.  
 κενός 19 a 16, 20, b 34: τὸ κενόν (i.e. the air) κύριον τοῦ ἀκούειν 19 b 33, ἀκούειν τῷ κενῷ καὶ ἤχουσι 20 a 18—κενῶς 3 a 2.  
 κεντεῖν: τὸ δὲν ὅλον κεντεῖ 20 b 2.  
 κέρας 19 a 5, 20 a 16.  
 κεφάλαιον: ἐν κεφαλαίῳ 33 b 21.  
 κεφαλὴ 16 a 4, 19 a 5.  
 κηρὸς 12 b 7, 24 a 19, 35 a 2, 9.  
 κινεῖν: διχῶς κινουμένοι παντός (ἡ γὰρ καθ' ἕτερον ἢ καθ' αὐτὸ) 6 a 4 sqq.; κινεῖσθαι κατά συμβεβηκός 6 a 19, 8 a 31 (cf. 6 b 7 sq.), φύσει, βία 6 a 22, 32 b 17, παρὰ φύσιν 7 b 2, ἄνω, κάτω 6 a 28, κύκλῳ 7 a 16, ὅλη opposed to κατὰ μόρια μεθισταμένη 6 b 2, ἀορίστως 34 a 4: οὐκ ἀναγκαῖον τὸ κινεῖν καὶ αὐτὸ κινεῖσθαι 6 a 3, 26 a 6 (contrast the opinion 3 b 30, 4 a 24); ἀδύνατον ἅμα τὰς ἐναντίας κινήσεις κινεῖσθαι τὸ αὐτὸ ᾧ ἀδιαιρέτον 26 b 30; ἔστι κινήθentos τουδὶ κινεῖσθαι ἕτερον ὑπὸ τοῦτου 28 b 10; εἰδὲ ἐν, ἀριθμῷ δὲ πλείω τὰ κινουῦντα κατὰ τόπον τὸ ζῶον 33 b 10, ἔστι τρία, ἐν μὲν τὸ κινεῖν, δεύτερον δὲ ἡ κινεῖ, ἔτι τρίτον τὸ κινούμενον 33 b 13, τὸ κινεῖν διττὸν 33 b 14 (cf. 16 b 27); transmission of motion in general 34 b 30—35 a 1; the particular case of animal locomotion 33 b 21—27; movement of animals in a wider sense κινεῖται τὸ κινούμενον (v.l.) ἢ ὀρέγεται 33 b 17 (cf. 33 b 27, 28), ἐκτὸς τῆς αἰσθήσεως κινεῖται 31 b 5, 33 a 2, 3 a 21 (cf. 8 b 5—11)—κινεῖν joined with ποιεῖν, κινεῖσθαι with πάσχειν 7 b 18, 19, 10 a 25, 16 b 33, 17 a 17, 34 b 29 (cf. 11 b 2, 17 a 15)—κινεῖν τὴν αἰσθησιν 20 a 30, b 3, τὴν αἰσθησιν ἢ τὴν νόησιν 26 b 31, τὴν βούλησιν (?) 34 a 13, τὴν ὅψιν 35 a 9, τὸ διαφανὲς 19 a 13, τὸ αἰσθητήριον 19 a 14, 27 (cf. τὸ κινήσμενον μέρος 20 a 6)—of air in motion 19 b 18, 35, 20 a 4, 5, 17, 21, 21 a 3, 35 a 4—opinions noticed or criticised ψυχὴν εἶναι τὸ κινεῖν, τῶν δὲ κινουμένων τι ὑπέλαβον εἶναι 3 b 29—4 a 9, τὸ αὐτὸ κινεῖν 4 a 21; πῶρ κινεῖται τε καὶ κινεῖ τὰ ἄλλα πρώτως 5 a 7; τὸ πᾶν ἐκίνησε νοῦς 4 a 27 (cf. 5 a 18).  
 κίνησις: ἐνέργεια τις, ἀτελής μέντοι 17 a 16, 31 a 6, ἔκστασις τοῦ κινουμένου 6 b 12 (cf. 26 a 2); κινήσεις τέσσαρες 6 a 12, 15 b 22 sqq.; ἀδύνατον τὰς ἐναντίας κινήσεις κινεῖσθαι 26 b 30; ἄλλο εἶδος κινήσεως

31 a 6 (cf. ἕτερον γένος ἀλλοιώσεως 17 b 7, 14); διὰ μέσου ἢ κίνησις 34 b 32: contrasted with στάσις 12 b 17, 13 a 23, 25 a 16 (cf. 25 a 18): ἡ φαντασία κινήσις τις 29 a 1 (cf. κινήσεις ἢ μονὰς 8 b 18), ὁρεῖται κινήσις τις ἢ ἐνέργεια (vv. ll.) 33 b 18, κίνησις κατὰ τροφὴν 13 a 24, κατ' αἰσθησιν καὶ φθίσιν 32 b 9.  
 κινήτικος 4 b 28, 5 a 10, 19, 25, 9 a 3, 10 b 19, 18 a 31, 19 a 10, 32 b 18; κινήτικὰ κατὰ τόπον 33 a 13, ἐαυτοῦ κινήτικόν 33 b 28—τὸ κινήτικόν 5 a 4, 20 a 3, κατὰ τόπον 14 b 17, 15 a 7 (cf. 14 a 32), τὸ κινήτικώτατον 4 b 8, 9 b 20, 10 b 17; ἡ τοῦ κινήτικού ἐνέργεια ἐν τῷ πάσχοντι ἐγγίνεται 26 a 4.  
 κινήτος 9 a 3.  
 κλᾶν: see κεκλασμένη.  
 κοῖλος 19 b 15, 16: contrasted with σιμὸς 31 b 14, 15, with κυρτός 33 b 23.  
 κοινός 21 b 8, 3 a 4, 5 b 20, 10 a 16, 12 b 4, 19 a 32, 21 b 18, 22 a 33, 25 a 6, 29 b 24, 25, 33 b 20; κοινὴ μέθοδος 2 a 17, κοινὸς λόγος 14 b 23, 25, κοινώτατος λόγος 12 a 5, κοινοστάτη δύναμις 15 a 24—τοῦ κοινού, δ' ἀπὸ δῶλεν 8 b 29—κοινὰ αἰσθητὰ opposed to ἴδια 18 a 10, 17, 19, 25 a 14, 27, 25 b 10, ἀκολουθοῦντα καὶ κοινὰ 25 b 6, τῶν κοινῶν καὶ ἐπομένων 28 b 22—κοινήν αἰσθησιν 25 a 27 (cf. τῇ κοινῇ 31 b 5)—κοινή 16 b 32—ἐν κοινῷ 7 b 29—κατὰ κοινόν τι 29 b 30, εἶδος 33 a 22.  
 κοινωνεῖν 11 b 28, 15 b 3, 5, 27.  
 κοινωνίαν 7 b 18.  
 κόρη: pupil, lens 13 a 3, 20 a 14, 25 a 4, 31 a 17.  
 κόρσαι (Emped.) 30 a 29.  
 κράσις 7 b 31.  
 κρατεῖν (Anaxag.) 29 a 19.  
 κρεῖττον: joined with ἄρχον 10 b 13.  
 κρίνειν: joined with γινώσκειν 27 a 20, with γινώσκειν 11 a 3 sqq., with both νοεῖν καὶ αἰσθάνεσθαι 27 a 18; δυνάμεις ἢ ἔξεις καθ' αἷς κρίνομεν καὶ ἀληθεύομεν ἢ ψευδόμεθα 28 a 3—of sense κρίνει τὰ αἰσθητὰ 24 a 5, ἐκάστη περὶ τῶν ἰδίων 18 a 14, ἐκάστη τὰς τοῦ ὑποκειμένου αἰσθητοῦ διαφορὰς 26 b 10, τῷ αἰσθητικῷ τὸ θερμὸν καὶ τὸ ψυχρὸν 29 b 15, τῇ ὅψει κρίνομεν καὶ τὸ σκότος καὶ τὸ φῶς 25 b 21, τὸ σκότος ἢ ὅψις 22 a 21—οἱ σεῖσις κοινταῖς ἕκαστον πρὸς ἕκαστον κρίνομεν 26 b 14, κεχωρισμένοι κρίνουν τὰ κεχωρισμένα 26 b 23, 27 a 13, ὅτι ἕτερον 26 b 17, τὰ μὴ ὁμογενὴ ἢ τὰ ἐναντία 31 a 24: τὸ κρίνουν 27 a 3, κρίνουν τὸ κρίνον 26 b 17—(Platonic) κρίνεται τὰ πράγματα 4 b 25.  
 κριτής 5 b 8, 11 a 6.  
 κριτικός: τὸ μέσον 24 a 6, νοῦς 34 b 3, τῷ κριτικῷ, δ' διανοίας ἔργον ἐστὶ καὶ αἰσθήσεως 32 a 16.  
 κρόκος 21 b 2.  
 κρούειν 20 a 23, 24 a 32.  
 κυβερνᾶν 16 b 26.  
 κύκλος 6 b 31, 32, 7 a 1, 16, 17, 20 (δύς), 22, b 6, 7, 10, 8 a 30, 23 a 7, 33 b 26.  
 κυκλοφορία 7 a 6.

κύριος: κατὰ φύσιν ὁ νοῦς 10 b 14 (cf. κυριώ-  
τατον 10 b 11); ψόφου 19 b 19, τοῦ ἀκούειν  
19 b 33, τοῦ ποιεῖν 33 a 5, ταύτης τῆς  
κινήσεως 33 a 6; κυρίως ὀνόμασιν 18 a 3  
(cf. κυριώτατα λέγομεν 8 a 6)—κυρίως ἐν  
καὶ δὴ ἐντελέχεια 12 b 9, ἐπιστάμενος  
17 a 29, αἰσθητὰ 18 a 24.

κυρτός 33 b 23.

κύων 2 b 7.

κωλύειν 4 a 14, 16 a 7, 17 a 28, 19 b 26,  
20 a 8, 30 b 7, τί κωλύει 9 a 23, οὐθέν  
κωλύει 13 a 7, 30 b 7, κωλύει καὶ ἀντι-  
φράττει 29 a 20.

κωλυτικός 3 b 4.

κωμωδοδιδάσκαλος 6 b 17.

λαμβάνειν: contrasted with φεύγειν 34 b 17;  
τὰ καλῶς εἰρημένα 3 b 23, τροφήν 13 a 30,  
ἀξέσπιν καὶ φθίσιν 13 a 27, ὅμμα 8 b 21,  
κριτήν 5 b 8, ὄνομα 21 a 32, 29 a 3, τινὰ  
πίστιν 2 a 11, ἐπιστήμην 17 b 12—grasp,  
understand τίς ὁ τρόπος 2 a 18, so 3 a 5,  
12 b 22, 15 a 15, 16 a 2, 24 a 17.

λάμπειν 19 a 4.

λαμπρός 22 a 22, 25, 26 b 1.

λανθάνειν 2 b 5, 11 a 1, 18 b 23, 25, 26,  
23 a 30, b 7, 8, 9, 25 b 5, 7, 28 b 8.

λάχε (Emped.) 10 a 5.

λέγειν: λέγω δέ, I mean 2 a 12 and often:  
πῶς λέγεται 9 b 23, ἀπλῶς λέγομεν 17 a  
22, 26 a 26, λέγεται διχῶς, δισῶς 6 a 10,  
12 a 22, 14 a 4, 17 a 10, 12, 26 a 23,  
ἀμφοτέρως λέγειν 16 b 6, τριχῶς 18 a 8,  
14 a 15, πλεοναχῶς 12 b 9, πολλαχῶς  
10 a 13, 15 b 9, ὁμοίως 17 b 19, οὕτω  
26 a 17, καθ' ὁμοιότητα 20 b 7, 21 b 8,  
κατὰ μεταφορὰν 20 a 29, 28 a 2, κατὰ  
δύναμιν 26 a 19, δυνάμει 17 b 30—ap-  
parently elliptical καθ' ἣν λέγεται τόδε  
τι 12 a 6, ἢ ἕκαστον ἐκείνων λέγεται 24 a  
23, ὁ ἐπιστήμων λέγεται ὁ κατ' ἐνέργειαν  
29 b 6—pronounce, λέγειν ὅτι ἔτερον 26  
b 20, 25 b 2, 26 b 21, 22, 25, 26, 27, 28,  
31 b 8, 32 b 28, 34 a 18, joined with  
ἐπιτάττειν 33 a 2.

λείος 19 b 7, 15, 16, 32, 20 a 1, 2, 23,  
35 a 8.

λείότης: φωνῆς, contrasted with τραχύτης,  
22 b 31.

λείπεσθαι 9 a 8, b 23, 28 a 18: of the only  
alternative 19 a 19, 23 a 13, 25 a 7: to  
be inferior 21 a 21.

λεπίς 19 a 5.

λεπτομερής 5 a 6, 22, 9 a 32, b 21.

λεπτομέρεια (v.l.) 5 a 11.

λεπτός 5 a 24.

λευκός 6 a 18, 10 a 6, 18 a 21, 22, 22 b 24,  
23 b 10, 24 a 8, 25 a 26, b 7, 26 b 10,  
13, 18, 21, 27 a 1, 8, 28 a 28, b 1, 21 (δύς),  
30 b 2, 3 (δύς), 5, 30, 31 a 25, 26, b 1—  
(earlier thinkers) οὔτε λευκὸν οὔτε μέλαν  
ἀνευ ὀψεως 26 a 21.

λίθινος 12 b 21.

λίθος 3 b 5, 5 a 20, 10 a 11, 31 b 29, 35  
a 3.

λιπαρός 21 a 30, 22 b 12.

λογίζεσθαι 31 b 7, 33 a 14.

λογισμός 9 b 16, 15 a 8, 9, 10, 33 a 12, 24,  
25, 34 a 8.

λογιστικός 32 a 25, 33 b 29, 34 a 7; τὸ  
λογιστικὸν 32 b 5, 26.

λόγος: speech, discussion, *oratio*, λόγῳ  
εἰπεῖν 18 a 27; ἐν κοινῇ γιγνομένοις 7 b  
29, 12, 15 a 12, 16 b 31, περὶ τοῦ ποιεῖν  
καὶ πάσχειν 17 a 2, 27 a 29, b 26, 32 b 8:  
hence, subject, ἑτέρος ἐστὶ λόγος 8 b 11,  
19 a 7, 21 a 6—account, explanation,  
*ratio*, λόγος πᾶς ὁρισμὸς ἢ ἀπόδειξις 7 a  
25, τοῦ συμπεράσματος 13 a 18, ὁ αὐτὸς  
λόγος περὶ, ἐπὶ 19 a 25, 22 b 17, 24 b 8,  
26 a 8, 31 b 1, ὅμοιος 30 b 22—form or  
notion, ἐνυλοὶ λόγοι 3 a 25, b 8 (δύς), 15 b  
14, 24 a 31; joined with εἶδος 3 b 2 (δύς),  
14 a 13, with τί ἦν εἶναι 12 b 16, with  
μορφή, εἶδος, ἐνέργεια 14 a 9, with ἐντε-  
λέχεια τις 14 a 27, with δύναμις 24 a 27,  
32 b 3; contrasted with ὕλη 16 a 18;  
οὐσία ἡ κατὰ τὸν λόγον 12 b 11 (cf. 24  
a 24); χωριστοῦ κατὰ λόγον contrasted  
with κατὰ μέγεθος 29 a 12, ἡ μεγέθει ἢ  
λόγῳ 32 a 20 (cf. 33 b 24), λόγῳ ἢ κατὰ  
τόπον 13 b 15, λόγῳ ἑτέρα 13 b 29, οὐ  
τῷ λόγῳ ἀλλ' ὅτι κτέ. 18 a 30—κατὰ τὸν  
λόγον γνωριμώτερον 13 a 12, πρότερα 15  
a 20, but κατὰ λόγον = εὐλόγως 14 a 25—  
definition, the notion expressed in words,  
more precisely ὁριστικός λόγος 13 a 14,  
λόγοι τῶν ὄρων 13 a 16, so 2 b 5, 3 b 4,  
9 b 15, 12 a 6, 14 b 20, 23, 25, 27, 15  
a 13—defining formula, ratio, proportion,  
λόγος τῶν μειχθέντων 7 b 32, 8 a 9, τῆς  
μείξεως 8 a 14, 15, 18, 19, 20, 22, 23  
(δύς), 27, 10 a 2, 8, 26 a 28, 29, b 3, 4,  
7, 29 b 16, πέρας καὶ λόγος 16 a 17—  
theory 7 b 14, 9 b 26, 10 a 28, opposed  
to fact 18 b 24—the argument personified  
11 b 12 (cf. 7 b 15)—reason, calculation  
27 b 14, 28 a 23, 24, τὸ λόγον ἔχον 32  
a 26, 31, 33 b 6—logical premiss 34 a 17.

λυγρός (Emped.) 4 b 15.

λύεσθαι 24 a 30.

λυτεῖν: λυτεῖ (v.l. λύει) 26 b 7: λυτεῖσθαι  
8 b 2, 5, 31 a 10.

λύπη: joined with ἡδονή 9 b 17, 13 b 23,  
14 b 4, 34 a 3.

λυπηρόν: contrasted with ἡδὺ 14 b 5, 21 a  
12, 31 a 9, b 9, 35 b 23.

λύρα 20 b 7.

λύσις 22 b 28.

μαθήματα 2 b 19.

μαθηματικός, ὁ 3 b 15: τὰ μαθηματικά 31  
b 15.

μάθησις 17 a 31.

μακάριος 7 a 34.

μαλακός: contrasted with σκληρός 22 b 27,  
23 b 4, 24 a 3.

μαλακόσκαρος 21 a 26.

μανθάνειν 8 b 14, 17 b 12, 29 b 9, 32 a 7.

μαντεύεσθαι 9 b 18.

μαραίνειν 8 b 24.

μαρτυρεῖν 10 a 29.

μάτην 32 b 21, 34 a 31.

μέγας (of sound) 22 a 26, 29 b 1.

μέγεθος: opposed to μικρότης 9 a 14, (of vocal sound) 22 b 30; τὸ τρίτον μέγεθος 23 a 23; μεγέθους καὶ αὐξήσεως 16 a 17; κεχωρισμένον μεγέθους 31 b 19; μέγεθος καὶ μεγέθει εἶναι 29 b 10: κατὰ μέγεθος opposed to κατὰ λόγον 29 a 12, μεγέθει ἢ λόγῳ 32 a 20 (cf. 33 b 25); κατὰ μέγεθος ἢ κατὰ σιγὴν 7 a 12, 14—one of the common sensibles 18 a 18, 25 a 16, 17, 18, b 6, 9, 28 b 24—of νοῦς 7 a 3, 10, 17: μέγεθος τι τὸ αἰσθανόμενον as opposed to αἰσθητικῶς εἶναι 24 a 26, 27—τὰ μεγέθη τὰ αἰσθητὰ 32 a 4, τῶν μεγεθῶν 8 a 6, opposed to ἀριθμὸς 7 a 9.  
 μέθη 8 b 23.  
 μεθίστασθαι κατὰ μόρια 6 b 3.  
 μέθοδος 2 a 14, 16, 17, 20.  
 μειγνύναι 5 a 1, 7 b 33, 8 a 9, 17, 22 a 14, 15, 25 a 7, 29 b 28 ἐν τῷ ὅλῳ μεμείχθαι 11 a 7, τῷ σώματι 7 b 2, 29 a 24.  
 μεικτός 11 a 10, 23 a 14, 26 b 5, 34 b 10.  
 μέλις 8 a 14, 15, 18, 22, 25, 28.  
 μέλας 22 b 24, 24 a 8, 26 a 21, b 11, 27 a 8, 30 b 23, 31 a 25, 26.  
 μέλι 21 b 2.  
 μέλιττα 28 a 11.  
 μέλλειν: διὰ τὸ μέλλον 33 b 8, ὁρᾶν τὸ μέλλον 33 b 10, τὰ μέλλοντα πρὸς τὰ παρόντα 31 b 8.  
 μέλος, limb: μέλεσι (v.l. μέρεσι) 8 a 21.  
 μέλος, melody 20 b 8.  
 μέν: *solitarium* 12 a 7, 18 a 14—answered by καὶ 18 a 27.  
 μέναι 6 b 21, 7 b 11, 9 a 12, 24 b 15, 33 b 26, 34 a 16, 35 a 1, 5.  
 μερίζεσθαι 6 b 29.  
 μεριστός 11 b 5, 7, 12, 13 a 5: opposed to ἀμερής 2 b 1, 7 a 19 (*dis*).  
 μέρος: τῶν φυτῶν 12 b 1, ἐντόμων 13 b 21, τὰ ὀργανικά μέρος 32 b 25; 3 a 27, 8 a 10, 11, 12 b 18, 22, 13 a 6: ὡς τὸ μέρος πρὸς τὸ μέρος, οὕτως ἡ ὅλη αἰσθησις πρὸς τὸ ὅλον σῶμα τὸ αἰσθητικόν 12 b 23, 24; τῆς ψυχῆς 10 b 25, 13 a 4, 33 b 1—τῆς ἐναντιώσεως 11 a 4—συμβάλλεται μέγα μέρος 2 b 22—(Emped.) 10 a 5.  
 μέσος 7 a 29, 13 a 19, 23 b 7, 12, 34 b 31, 33, 35 a 1, τὸ μέσον κριτικόν 24 a 6.  
 μεσότης 24 a 4, b 1, 31 a 11, 19, 35 a 21.  
 μεταβάλλειν 16 a 33, b 2, 17 a 32—of spatial motion 6 b 2, 34 b 30.  
 μεταβολή: ἡ μεταβολὴ πᾶσιν εἶς τὸ ἀντικείμενον ἢ τὸ μεταξὺ 16 a 33, ἐπὶ τὰς στερητικὰς διαθέσεις 17 b 15, τοῦ αἰσθητικοῦ 17 b 17.  
 μεταξύ: preposition 18 b 22, 19 b 8, 22 b 13, 23 a 23; adverbial 23 a 27—περὶ τῶν μεταξύ 6 a 30, μεταβολὴ εἰς τὸ μεταξύ 16 a 34; κενὸν τὸ μεταξύ 19 a 16, ὑπὸ τοῦ μεταξύ 19 a 20, ἀναγκαῖον τι εἶναι μεταξύ 19 a 20—τὸ μεταξύ, the medium between sense and sensible 19 a 27, 32, 22 b 22, 23 a 15, b 14 (*dis*), 15, 26, ὡς τὸ μεταξύ 22 a 16, διὰ τοῦ μεταξύ 21 b 9, 22 a 9, 13, 34 b 28, διὰ τῶν μεταξύ 24 b 29, 35 a 16.  
 μεταπελθεσθαι 28 b 6.

μεταπίπτειν 28 b 8.  
 μεταφορά 20 a 29, 28 a 2.  
 μετεῖναι 27 b 8.  
 μετέχειν 6 a 12, 22, 10 b 23, 12 a 15, 13 b 8, 15 a 29, b 5, 25, 16 b 9, 33 b 30.  
 μετρεῖν 34 a 9.  
 μέχρι: ἐκείνης (τῆς ψυχῆς) 8 b 16, μέχρι τούτου ἐστὶν 16 b 14, 35 a 3 (cf. 34 a 23), μέχρις ἀκοῆς 20 a 3, μέχρι τοῦ 34 b 30, μέχρι πόρρω 35 a 4, τοῦ πέρας 35 a 9—conjunction 35 a 7.  
 μήκος 30 b 8, 10, 13, 19, 20—(Platonic) τοῦ πρώτου μήκους 4 b 20.  
 μήνυγξ 20 a 14.  
 μηνύει (v.l. for σημειῖν) 3 a 19.  
 μήτις (Emped.) 27 a 23.  
 μικρομέρεια (v.l. for λεπτομέρεια) 5 a 11.  
 μικρός: of odour 21 b 7, of sound 22 a 25, of flavour 22 a 30, of tangible qualities 24 a 13.  
 μικρότης: opposed to μέγεθος 9 a 15; of vocal sound 22 b 30.  
 μισεῖν contrasted with φιλεῖν 3 a 18, 8 b 26.  
 μνημονεύειν 8 b 28, 30 a 24.  
 μνημονικός: ἐν τοῖς μνημονικοῖς 27 b 19.  
 μόλις ὀρώμενον 18 b 28.  
 μοναδικός: σιγῇ 9 a 20.  
 μονάς: κινουμένη 9 a 1, τῶν μονάδων κινήσεις 9 a 5, θέσιν ἔχουσα 9 a 6, αἱ ἐν τῷ σώματι 9 a 22, φερομένης 9 b 10: 9 a 8, 11, 16, 19, 22, b 9.  
 μοναχῶς 4 b 22.  
 μονή: κινήσεις ἢ μονάς (κινήσεων) 8 b 18.  
 μόνιμος: τινὰ μόνιμα τῶν ζώων κατὰ τόπον 10 b 19, 32 b 20, 34 b 2, 4, 8.  
 μόνος: ταύτην μόνην τῶν κινήσεων 10 b 20; χωρισθείς ἐστὶ μόνον τοῦθ' ὅπερ ἐστὶ 30 a 22, and often.  
 μόριον: τοῦ παντὸς 11 a 23: of the living body or organism (cf. μέρος) 6 a 8, 8 a 26, 27, 11 b 18, 14 a 7, 20 b 14, 23, 24, 28, 21 a 5, 23 a 6, 18, b 31, 33 a 1, 35 a 25, ὀργανικόν 32 b 18, τῶν ἐντόμων 11 b 21, 24: "parts" of the soul (seldom expressed by μέρος) 2 b 9, 10, 12, 6 b 3, 11 a 19, b 3, 14, 16, 25, 13 b 7, 14 (*dis*), 27, 29 a 10, 32 a 19, 21, 23, 28, b 2, μόριον ψυχικόν 24 a 33—(according to some) τὸ ὅλον τοῖς μορίοις ὁμοειδὲς 11 a 17—of νοῦς in the *Timaeus* πότερον ὁπωῦν μορίῳ τῶν αὐτοῦ; μορίῳ δ' ἦτοι κατὰ μέγεθος ἢ κατὰ σιγῇ, εἰ δὲ καὶ τοῦτο μόριον εἰπεῖν 7 a 11 sq., 16, 18.  
 μορφή: joined with εἶδος 7 b 24, 12 a 8, 14 a 9.  
 μῦθε 28 a 16.  
 μῦθοι: Πυθαγόρικοι 7 b 22.  
 μύκης 19 a 5.  
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 μύρμηξ 19 a 17, 28 a 11.  
 νεῖκος (Emped.) 4 b 15 (*dis*): cf. 10 b 6.  
 νέος 8 b 22.  
 νεῦρον 10 b 1.  
 νηγεμία 4 a 20.  
 νῆστις (Emped.) 10 a 5.  
 νικᾶν 34 a 12.

νοεῖν: joined with γινώσκειν 10 a 26, with θεωρεῖν 8 b 24; ἕτερον τοῦ αἰσθάνεσθαι 27 b 27 (cf. 29 b 10—22, 27 b 8—11); νοήσαι ἐπ' αὐτῷ, ὁπόταν βούληται, αἰσθάνεσθαι δ' οὐκ ἐπ' αὐτῷ 17 b 24; εἰ ἔστιν ὥσπερ τὸ αἰσθάνεσθαι, ἡ πᾶσχειν τι ἂν εἴη ὑπὸ τοῦ νοητοῦ ἢ τι τοιοῦτον ἕτερον 29 a 13 (cf. 29 b 24, 25); νοεῖ οὐδέποτε ἄνευ φαντάσματος 31 a 17 (cf. 32 a 8), τὰ εἶδη ἐν τοῖς φαντάσμασι 31 b 2 (cf. εἰ ἔστι φαντασία τις ἡ μὴ ἄνευ φαντασίας, οὐκ ἐνδέχεται ἂν οὐδὲ τὸ νοεῖν ἄνευ σώματος εἶναι 3 a 8—10, νοηθῆναι ἢ φαντασθῆναι 33 b 12); τοῦ νοεῖν τὸ μὲν φαντασία δοκεῖ εἶναι τὸ δὲ ὑπόληψις 27 b 27 sq. (cf. 33 a 10); τὸ νοεῖν distinguished from τὸ νοητικὸν 15 a 18, from νοῦς 2 b 13; μάλιστ' ἔοικεν ἰδῖον τῆς ψυχῆς 3 a 8, μαραινέται ἁλλου τινὸς ἔσω φθειρομένου, αὐτὸ δὲ ἀπαθὲς 8 b 24; εἰ πάση τῇ ψυχῇ νοοῦμεν 11 b 1, ᾧ νοεῖ καὶ ἐν ᾧ χροῖναι 30 b 16: πῶς γίνεται τὸ νοεῖν 29 a 13; ἐν τῷ νοεῖν ἐστὶ τὸ ὁρθῶς καὶ τὸ μὴ ὁρθῶς 27 b 9; τοῦ μὴ ἀεὶ νοεῖν τὸ αἴτιον 30 a 5 (contrast 30 a 22); ἐπὶ τῶν ἄνευ ὕλης τὸ αὐτὸ ἐστὶ τὸ νοοῖν καὶ τὸ νοοῦμενον 30 a 4; κατὰ τὸ νοοῖν καὶ φρονεῖν 17 b 10: πρὶν νοεῖν 29 a 24 (cf. 29 b 31); νοῦν 31 b 17; οὐ μᾶλλον νοήσει 34 b 6—πάντα 29 a 18, ἄνευ τούτου οὐθὲν 30 a 25, σφόδρα νοητὸν 29 b 3, τὰ ὑποδέεστέρα 29 b 4, αὐτὸν 29 b 9, τὸ ἀδιαίρετον 30 b 7, τὸ μήκος 30 b 8, ἐκότερον τῶν ἡμίσεων 30 b 12. τὸ τῷ εἶδει ἀδιαίρετον 30 b 15, τὸ σιμὸν, ᾧ μὲν σιμὸν, οὐ κεχωρισμένως, ᾧ δὲ κοῖλον, ἃ τις ἐνέει ἐνέργεια, ἄνευ τῆς σαρκὸς δὲ ἐνέει 31 b 13—15, τὰ μαθηματικά οὐ κεχωρισμένα ὡς κεχωρισμένα 31 b 16, τῶν κεχωρισμένων τι 31 b 18, μονάδα κινούμενην 9 a 1—of simple apprehension αἰσθάνεσθαι ὁμοιον τῷ φάναι μόνον καὶ νοεῖν 31 a 8; of judgment ὡς λέγει, ὅτι καὶ νοεῖ καὶ αἰσθάνεται 26 b 22—(of earlier thinkers) δοκεῖ καὶ τὸ νοεῖν καὶ τὸ φρονεῖν ὥσπερ αἰσθάνεσθαι τι 27 a 19 (cf. 27 a 18), σωματικὸν ὑπολαμβάνουσιν 27 a 26, λέγουσιν τινας ἄλλο μὲν τῆς ψυχῆς νοεῖν ἄλλο δὲ ἐπιθυμεῖν 11 b 6; (objections to Plato) πῶς νοήσει μέγεθος ὦν 7 a 10, 14, 17, 18, 22, 32.

νόημα 7 a 7; σύνθεσις νοημάτων 30 a 28, συμπλοκή 32 a 11, τὰ πρῶτα νοήματα 32 a 12, φαντάσματος ἡ νοήμασι 31 b 7.

νόησις 6 b 25, 33 a 10, 12: μία καὶ συνεχὴς 7 a 7, ἡ νόησις τὰ νοήματα 7 a 7; according to Plato νοῦ κλησις νόησις 7 a 20, περιφορά 7 a 21 (cf. 7 a 22), but according to Aristotle ἔοικεν ἡρεμήσει 7 a 32; τῶν πρακτικῶν νοήσεων ἔστι πέρατα, αἱ δὲ θεωρητικαὶ τοῖς λόγοις ὁμοίως ὁρίζονται 7 a 24; ἡ τῶν ἀδιαίρετων νόησις 30 a 26; joined with αἰσθησις 27 a 1, 9; distinguished from ὑπόληψις 27 b 17.

νοητικός: ἡ νοητικὴ ψυχὴ 29 a 28; τὸ νοητικὸν 15 a 17, 29 a 30, 31 b 2, νοητικὸν 33 b 3.

νοητός: τὸ ἀντικείμενον τοῦ νοῦ 2 b 16, τοῦ νοητικοῦ 15 a 22 (cf. 29 a 18); νοητὰ

distinguished from αἰσθητὰ 31 b 22; ἡ μεμειγμένον τι ποιεῖ νοητὸν 29 b 28, εἰ νοητὸς καὶ αὐτὸς ὁ νοῦς 29 b 26, 30 a 2, κατ' ἄλλο 29 b 28, ἐν τι τὸ νοητὸν εἶδει 29 b 28, τῷ νῷ τὸ νοητὸν ὑπάρξει 30 a 8, δυνάμει ἐστὶ τὰ νοητὰ ὁ νοῦς 29 b 30, ἐν τοῖς ἔχουσιν ὕλην δυνάμει ἕκαστον τῶν νοητῶν 30 a 7, ἐν τοῖς εἰδῶσι τοῖς αἰσθητοῖς τὰ νοητὰ ἐστὶ 32 a 5; σφόδρα νοητὸν 29 b 3—29 a 14, 30 a 3.

νόος (Homer) 27 a 26.

νόσος 8 b 24, 29 a 7.

νόος: distinguished from νοεῖν 2 b 13, from αἰσθητικὸν 2 b 16, 29 a 17, from αἰσθησις 32 a 18—one of the modes of life 13 a 23, confined to men and higher beings 14 b 18, 29 a 6, 7, 4 b 5; ὁ καλούμενος νοῦς 7 a 5, 29 a 22, joined with τὸ λογιστικὸν 32 b 26; κριτικὸς 34 b 3; προγενέστατον καὶ κύριον κατὰ φύσιν 10 b 14 (cf. 10 b 12—14); δύναμις ἡ ἕξις καθ' ἣν κρίνομεν καὶ ἀληθεύομεν ἢ ψευδόμεθα 28 a 5 (contrast τῶν ἀεὶ ἀληθευόντων 28 a 18), ὁ νοῦς οὐ πᾶς ἀληθὴς ἢ ψευδὴς 30 b 27, ὁ τοῦ τί ἐστὶ κατὰ τὸ τί ἦν εἶναι ἀληθὴς, καὶ οὐ τι κατὰ τινος 30 b 28 (cf. δυνάμει τινὶ περὶ τὴν ἀλήθειαν 4 a 30)—ὁ θεωρητικὸς νοῦς 15 a 12, ὁ νοῦς καὶ ἡ θεωρητικὴ δύναμις 13 b 24, ἔοικε ψυχῆς γένος ἕτερον εἶναι καὶ τοῦτο μόνον ἐνδέχεται χωρίζεσθαι, καθάπερ τὸ αἰδῖον τοῦ φθαρτοῦ 13 b 25 sq., εἰς καὶ συνεχὴς 7 a 6, ἥτοι ἀμερῆς ἢ οὐχ ὡς μέγεθος τι συνεχὴς 7 a 9, ἔοικεν ἐγγίγνεσθαι οὐσία τις οὐσα, καὶ οὐ φθείρεσθαι 8 b 18, θεώτερόν τι καὶ ἀπαθὲς 8 b 29; joined with τὸ διανοητικὸν 14 b 18; ᾧ διανοεῖται καὶ ὑπολαμβάνει ἡ ψυχὴ 29 a 23 (cf. ᾧ γνωσκει τε ἡ ψυχὴ καὶ φρονεῖ 29 a 10); ἀπαθὲς, δεκτικὸν τοῦ εἰδῶς καὶ δυνάμει τοιοῦτον ἄλλα μὴ τοῦτο 29 a 15, ἀμυγῆς 29 a 18, ἡ φύσις αὐτοῦ ὅτι δυνατὸν 29 a 22, οὐθὲν ἐνέργεια τῶν ὄντων πρὶν νοεῖν 29 a 24 (cf. 29 b 30); οὐδὲ μεμειγχθαι εὐλογον τῷ σώματι 29 a 24 sq., οὐθὲν ὄργανόν ἐστι πῶς νῆ 29 a 27; χωριστὸς opposed to οὐκ ἄνευ σώματος 29 b 5; νοῦς distinguished from αἰσθησις as regard<sup>s</sup> ἀπάθεια 29 b 3 sq.; διχῶς δυνάμει 29 b 5—8, αὐτὸς αὐτὸν τότε δύναιται νοεῖν 29 b 9; τὰ περὶ τὸν νοῦν 29 b 22; πῶς νοητὸς καὶ αὐτὸς 29 b 26—30 a 9 (cf. 29 b 9); δυνάμει πῶς τὰ νοητὰ 29 b 30; τοῖς ἔχουσιν ὕλην οὐχ ὑπάρξει νοῦς 30 a 7 (contrast ἡ τοῖς ἄλλοις νοῦς ὑπάρξει 29 b 27); ἄνευ ὕλης δύναμις ὁ νοῦς τῶν ἐχόντων ὕλην 30 a 8—νοῦς ὁ τῷ πάντα ποιεῖν distinguished from ὁ τῷ πάντα γίνεσθαι 30 a 14 sq., χωριστὸς 30 a 17, ἀπαθὴς, ἀμυγῆς, τῇ οὐσίᾳ ὦν ἐνέργεια 30 a 18, ἀεὶ νοεῖ, χωρισθεὶς ἐστὶ μόνον τοῦθ' ὅπερ ἐστὶ 30 a 22, μόνον ἀθάνατον καὶ αἰδῖον 30 a 23—ὁ παθητικὸς νοῦς φθαρτὸς 30 a 24—τὸ ἐν ποιοῦν, τοῦτο ὁ νοῦς ἕκαστον 30 b 6, ὁ νοῦς ὁ κατ' ἐνέργειαν τὰ πράγματα 31 b 17, εἶδος εἰδῶν 32 a 2—ὁ πρακτικὸς νοῦς: ὁ ἐνεκά του λογιζόμενος 33 a 14, distinguished from ὁ θεωρητικὸς 33 a 14 sq., 32 b 27 sqq., πᾶς ὁρθὸς ὁρ-

posed to *δρεῖς* and *φαντασία* 33 a 26, b 7 (cf. 33 a 8), τὸ ὁρεκτὸν ἀρχὴ 33 a 16, *κινητικὸς κατὰ τόπον* 33 a 13 (cf. 33 a 9, 21), οὐ κινεῖ ἀνευ ὁρέξεως 33 a 23 (cf. 33 a 2), οὐ νοῦς ἐνεκά του ποιεῖ 15 b 16—earlier thinkers: (Anaxag.) ἀρχὴν μάλιστα πάντων 5 a 15 (cf. 4 a 27, 5 a 18), ἀπλοῦν, ἀμυγῇ, καθαρὸν 5 a 16 sq., ἀπαθὴς, κοινὸν οὐθὲν οὐθενὶ ἔχειν 5 b 20 (cf. 29 b 23), ἐν ἅπασιν ὑπάρχειν τοῖς ζώοις 4 b 3, ἕτερον ψυχῆς 5 a 14 (cf. ἦττον διασφαλεῖ 4 b 1), τὸ αἴτιον τοῦ καλῶς καὶ ὀρθῶς 4 b 2: (Democr.) ἀπλῶς ψυχὴν ταυτὸν καὶ νοῦν 4 a 28, 31, 5 a 9, οὐ χρῆται τῷ νῷ ὡς δυνάμει τινὶ περὶ τὴν ἀλήθειαν 4 a 30, made of spherical atoms 5 a 13: ἐκ τῶν στοιχείων ποιοῦσιν 10 b 22, μέρος τι τῆς ψυχῆς 10 b 25: (against doctrine of parts of soul) ποῖον μέρος ἢ πῶς ὁ νοῦς συνέρξει 11 b 18 (cf. 8 a 12): (Platonic) βέλτιον τὸν νοῦν μὴ μετὰ σώματος εἶναι 7 b 4, νοῦ κινήσεις νήσεις 7 a 20, 21, νοῦν τὸ ἐν 4 b 22, κρίνεται τὰ πράγματα νῷ 4 b 26.  
*νῦν*: οὕτω λέγει, καὶ νῦν, καὶ ὅτι νῦν 26 b 28 and often: as a matter of fact, under present conditions 8 b 20, 12 b 15, 13 a 16, 23 a 2, 10, 20, 23 b 2, 10, 11, 24 b 25, 25 a 9, 22, b 9, 29 a 27, 33 a 22, 34 b 6: somewhat similar are 17 a 21, 23 a 12: νῦν=νυνδὴ 10 a 29, 32 a 28.

ξανθὸς 25 b 2, 3.  
 ξηρὸς 23 a 26: contrasted with ὑγρὸς 14 b 7, 12, 22 a 6, b 26, 23 b 28.  
 ξύλινος 6 b 19.  
 ξύλον 3 b 6, 24 b 12.  
 ξυνίλοι (v. l. ξυνέλι) 32 a 8.  
 ξύσματα 4 a 3, 18.

ὀδὶ 3 b 6, 28 b 10: ἀπὸ τωνδὶ=ἀπὸ τῶν καθ' ἑκάστον αἰσθητῶν 8 b 17.

ὀδμῇ 24 b 8.

ὀξεύω 19 a 29, 24 b 16.

οἰκείος: ὕλη 14 a 26, εἶδος 14 b 27, χρώμα 19 a 2, κινήσεις 20 a 16, λόγος 15 a 13, 16 b 31: with genitive 5 b 6, 6 a 8, 7 b 12; with dative 4 a 22, 27 b 1.

οἰκία 3 b 3.

οἰκοδομεῖν 8 b 13, 17 b 9.

οἰκοδόμος 17 b 9.

οἰκουμένη, ἡ 28 b 4.

οἶον: as it were, ἀρχὴ 2 a 6, ἥδυσμα 14 b 13, ἐνέργεια 14 a 9, χρώμα 18 b 11, ὑμένα 23 a 3, μεσότητος 24 a 4, αἰσθητά 31 a 25, κεντεῖ, ὡθεῖ 20 b 2, καταφάσκα ἢ ἀποφάσκα 31 a 9: for instance (citing examples) 2 b 6 and often: namely, that is to say (when the instances cited are exhaustive) 14 b 18, 32, 20 b 7, 10, 21 b 9, 24 b 30, 29 a 6, 8, 34 b 15, 25, 35 b 8, probably also 13 a 23, 15 a 17, 22, 19 a 4, 26 a 12, 33 a 3.

οἶονεῖ 30 b 13.

ὀλιγίστον ἔχουσα τὸ ψεύδος 28 b 19.

ὀλος: ἐκ τοῦ ὅλου 10 b 29, ἐν τῷ ὅλῳ 11 a 7, τὸ ὅλον τοῖς μορίοις ὁμοειδὲς 1 a 17 (cf. 11 b 26): φύσις 4 a 5, οὐρανὸς 5 b 1,

κύκλῳ opposed to τοῖς μορίοις 7 a 17, μορίῳ τινὶ τοῦ σώματος ἢ καὶ ὅλῳ 14 a 8—similarly opposed to μόριον or μέρος: τὸ ζῶν σῶμα 12 b 23, αἰσθησις 12 b 24, ψυχὴ 2 b 10, 6 b 2, 11 a 30, 11 b 15, 27; ψυχὴ opposed to νοητικὴ 29 a 28, περὶ πάσης ψυχῆς οὐδὲ περὶ ὅλης οὐδεμίας 10 b 27—ὅλως: wholly, absolutely 21 b 7, 22 a 27, 30 a 21, 31 a 2, probably also 26 b 5—(in negative or virtually negative sentences) at all 7 a 17, 8 b 31, 9 b 10, 18 b 14, 19 a 21: generalising from particular cases 6 b 24, 8 a 2, 10 b 7, 12 b 7, 23 b 17, 31 b 10, 16, 33 a 4, b 27, ὅλως ἄρα 29 b 21—(after enumerations) in short 3 a 7, 11 a 28, 35 b 22.

ὀμαλὸς 20 a 25.

ὀμβρος 3 b 5.

ὀμμα 8 b 21, 21 b 28, 22 a 1, 23 b 22, 27 b 18.

ὀμογενής 31 a 24.

ὀμοειδής 2 b 2 (*dis*), 11 a 17, 18, 21, b 25.

ὀμοιομερής 11 a 23.

ὀμοιοι: τῷ ὀμοίῳ τὸ ὅμοιον 4 b 17 and often —ὀμοίως 4 b 18, 6 b 19 and often.

ὀμοιότης: καθ' ὀμοιότητα 20 b 6, τῶν πραγμάτων 21 b 1.

ὀμοιοτρόπως 4 b 21.

ὀμοιοῦσθαι 18 a 6.

ὄν: πολλαχῶς λεγόμενου τοῦ ὄντος 10 a 13: τὰ ὄντα 31 b 21, 22, 4 b 9, 5 a 16, 28, 9 b 25, 10 b 8, 15, 16, 12 a 6, 14 b 26, 27 a 21, 29 a 24.

ὄνομα 5 b 26, 19 a 4, 21 a 32, 29 a 3, 35 a 17, κυρίως ὀνόμασιν 18 a 3.

ὄνομαζειν 5 b 28, 26 a 12.

ὀξύς: of sound, opposed to βαρὺς 20 a 29, 30, 32, 22 b 24, 26 a 31, b 6; of odour 21 a 30; of flavour 22 b 14; of tangibles, opposed to ἀμβλὺς 20 b 1, 2—26 b 4.

ὀξύτης of sound 22 b 30.

ὀπωσοῦν ἔχοντα 10 a 1.

ὄραμα 28 a 16, 35 b 11.

ὄραν: τὸ τῇ ὀφει αἰσθάνεσθαι ἔστιν ὄραν 25 b 18, πάσχοντος τοῦ αἰσθητικοῦ γίνεσθαι τὸ ὄραν 19 a 18; ὄραται χρώμα ἢ τὸ ἔχον 25 b 18 (cf. 19 a 19), πᾶν τὸ ἐκάστον χρώμα ἐν φωτὶ ὄραται 18 b 3 (cf. 19 a 8, 9, 22, 20 a 28, 29 a 4 and contrast 19 a 2, 6, 7), πῦρ ὄραται ἐν σκότει καὶ ἐν φωτὶ 19 a 23, τὸ χρώμα οὐχ ὄραται τῷ μετῆνυσθαι οὐδὲ ταῖς ἀπορροαῖς 22 a 15; μὴ κινήσας μὴδ' ἀνασπάσας τὰ βλέφαρα οὐχ ὄρα 21 b 30, τὰ σκληρόφθαλμα εὐθὺς ὄρα 21 b 31, εἰάν τις θῇ τὸ ἔχον χρώμα ἐπ' αὐτὴν τὴν ὄψιν, οὐκ ὀφεται 19 a 13, ἐκ τῶν ἰσχυρῶν χρωμάτων ἡ αἰσθησις οὐ δύναται ὄραν 29 b 3; τὸ ὄραν τοῦ ἰδίου ἀληθές 30 b 29; αἰσθάνεσθαι ὅτι ὀρώμεν 25 b 12, 13, εἰ ὀφεται τις τὸ ὄραν, χρώμα ἔχει τὸ ὄραν πρῶτον 25 b 19 (cf. 25 b 22): τὸ δύναμει ὄραν 17 a 11, τὸ μὴ δυνάμενον ἰδεῖν 24 b 5, τὸ μὴδὲ ὀρώμενον 18 b 29; ὥσπερ ὄραν λογίζεται τὰ μέλλοντα 31 b 7 (cf. 33 b 10): observe 4 a 24, 13 b 19, 25 a 30 and often; understand 13 b 16;

consider 28 a 18—(Democr.) *εἰ γένοιτο κενὸν τὸ μεταξὺ, ὁρᾶσθαι ἢν ἀκριβῶς* 19 a 16 (contrast 19 a 21).

*δρασις*: *ἐντελέχεια* 12 b 28, ἡ τῆς ὄψεως *ἐνέργεια* 26 a 13, 28 a 7.

*δρατὸς*: οὐ ἐστὶν ἡ δύς 18 a 26, *χρῶμα καὶ ὁ λόγος μὲν ἔστιν εἰπεῖν, ἀνώνυμον δὲ* 18 a 26, 29, 22 a 16, οὐκ ἄνευ φωτὸς 18 b 2 (contrast οὐ πάντα δρατὰ ἐν φωτὶ ἔστιν 19 a 1): τὸ δρατὸν δι' ἐτέρων αἰσθανόμεθα 23 b 5, ποιητικὸν τῆς ἐνεργείας, *ξέσθην* 17 b 20, διαφέρει τῶν ἀπτῶν 23 b 12, τὸ καθ' αὐτὸ δρατὸν 18 a 30, b 5: opposed to *ἀόρατος* 21 b 5, 22 a 20, 24 a 10.

*δργᾶν* 3 a 22.

*δργανικός*: σῶμα *δργανικόν* = *φυσικόν* *δυνάμει* *ζῶν* *ἔχον* 12 a 28, b 6, *μόριον* 32 b 18, *μέρη* 32 b 25—*δργανικῶς* 33 b 21.

*δργανον* 7 b 26, 12 b 12, 13 a 1, *ἔτερα καὶ ταῦτὰ τοῖς ἔργοις* 16 a 5; of plants 12 b 1; of animals 11 b 23, 20 b 22, 32 a 2, *ὦ κινεῖ ἡ δρεξις* 33 b 19; πάντα τὰ φυσικὰ σώματα τῆς ψυχῆς *δργανα* 15 b 19; of νοῦς 29 a 26 sq.

*δργή*: *δρεξις ἀντιληπτήσεως* 3 a 30, *ζέσις τοῦ περὶ καρδίαν αἵματος ἡ θερμότης* 3 a 31.

*δργίζεσθαι* 3 a 7, 22, 26, 8 b 2, 8, 12.

*δρέγασθαι*: πάντα τοῦ ἀεὶ καὶ τοῦ θελοῦ *δρέγεται* 15 b 1, οὐθὲν μὴ *δρεγόμενον* ἡ *φεύγον* *κινεῖται* *ἢ βλεῖ* 32 b 17 (cf. 33 b 17), οἱ *ἐγκρατεῖς* 33 a 7.

*δρεκτικός*: οὐκ ἄνευ *φαντασίας* 33 b 28: *εἰ τὸ αἰσθητικόν, καὶ τὸ δρεκτικόν* 14 b 1, οὐχ ἔτερον τοῦ *φενκτικοῦ* οὐτε τοῦ *αἰσθητικοῦ*, ἀλλὰ τὸ εἶναι ἄλλο 31 a 13 (cf. 32 b 3); τὸ κινεῖν τὸ *δρεκτικόν*, *τῇ δρεκτικόν* 33 b 11, a 21 (cf. 33 b 27), κινεῖν καὶ κινουμένων 33 b 17—8 a 13, 14 a 31, 33 b 3.

*δρεκτός*: τὸ *δρεκτόν* *κινεῖ* 33 a 18, 28, b 11 sq., ἀρχὴ τῆς *διανοίας* 33 a 20, ἡ τὸ ἀγαθὸν ἡ τὸ φαυλόμενον ἀγαθὸν 33 a 28.

*δρεξις*: *κίνησις τις ἡ ἐνέργεια* (vn. ll.) 33 b 18, τοῖς *ἔχουσιν ἀφὴν ὑπάρχει* 14 b 15 (cf. 13 b 23), *ἐνεκά του πᾶσα* 33 a 15, *ὀρθή καὶ οὐκ ὀρθή* 33 a 26, *ἐναντία ἀλλήλαις* 33 b 5; *ἐπιθυμία καὶ θυμὸς καὶ βούλησις* 14 b 2 (cf. 32 b 7, 33 a 23, 26), contrasted with *φυγὴ* 31 a 12: τὰ κινουῖντα ἡ *δρεξις* ἡ *νοῦς* 33 a 9 (cf. 33 a 13, 18, 20, 22, 23, b 19): *δρεξις* = *ἀλόγος δρεξις* 33 a 6, 8, 25, 34 a 12: ἡ *καλονομένη* 33 b 1: 3 a 30, 11 a 28, 32 b 16, 33 a 16, 34 a 14.

*δρθογώνιον* 13 a 17.

*ὀρθός*: (sc. *γωνία*) 2 b 20, 33 a 26, 27 (*ὅς*)—*ὀρθὸς* 16 b 8, 9, 18 b 20, 19 b 33, 26 a 22 (*ὅς*), 27 b 9 (*τερ*), 10; τοῦ *ὀρθὸς* 4 b 2.

*ὀρίζειν* 3 a 29, 5 b 11, 13, 7 a 25, 9 b 19, 13 b 12, 20 a 19, 27 a 17, 31 b 3, 32 a 15, 35 b 16, *σκιᾷ τὸ φῶς ὀρίζομεν* 19 b 33.

*ὀρισμός* 2 b 26, 7 a 25, 30, 9 b 13.

*ὀριστικός λόγος* 13 a 14.

*ὀρμαθὸς ψάμμον* 19 a 24.

*ὀρος*: definition 3 a 25, 13 a 14, 16, 18: limit 4 a 9: boundary point 31 a 22.

*ὅς*: antecedent contained in relative clause *ὃ χρῆται ὀργάνῳ σωματικόν ἐστίν* 33 b 19,

23 a 23, 27 a 10; suppressed *ἀλλ' ἐν ᾧ* 8 b 23, a 32, *ἀλλ' ἐν οἷς ἐστίν* 24 b 11.

*ὀσμάσθαι* 19 b 2, 21 a 11, b 14, 15, 22 a 4: τὸ *ὀσμάσθαι καὶ αἰσθάνεσθαι* 24 b 17 (cf. 24 b 16): *ἐκ τῶν ἰσχυρῶν ὀσμῶν ἡ αἰσθησις οὐ δύναται ὀσμάσθαι* 29 b 3.

*ὀσμή* (see II., c. 9): odour (= τὸ *ὀσφραντόν*) 19 a 25, 27, 32, 21 a 8, 16, 18, 27, 28, 29, 30, 32, 21 b 24, 22 a 6, 24 b 4, 6 (*ὅς*), 14, 26 b 2, 29 b 2, 35 b 9, 11; οὐ *τρέφει* 34 b 20 (cf. 14 b 11), οὐδὲν *ποιεῖ τὰ σώματα* 24 b 10; *ἔχειν ὀσμήν* 21 b 7, τὸ *ἔχον* 19 a 34, *ὀσμῆς αἰσθάνεσθαι* 21 b 10, 21, 23 a 9, *ἔχειν αἰσθησιν ὀσμῆς* 19 b 1, 15 a 6—once used for *ὀσφρησις*, the sense of smelling, and distinguished from *ὀσφραντόν* 21 a 7 (cf. 19 b 4, 22 b 17).

*ὀστοῦν* 8 a 15, 9 b 32, 10 a 3, 6, 9, b 1, 35 a 24.

*ὀσφραίνεσθαι* 21 a 11, b 25, 22 a 5, 24 b 4, 7.

*ὀσφραντικὸν αἰσθητήριον* 21 b 32, 22 a 7.

*ὀσφραντός* 21 a 7, 11, b 22: δι' ἐτέρων *αἰσθανόμεθα* 23 b 6, *εἰ τὸ ὀσφραντόν ὀσμή* 24 b 6: opposed to *ἀνὸσφραντος* 21 b 6.

*ὀσφρησις*: sense of smelling 23 a 10, 24 b 3, τοῦ *ὀσφραντοῦ καὶ ἀνοσφραντοῦ* 21 b 5 sq., καὶ *δυσώδους καὶ εὐώδους* 21 b 23, *διὰ τοῦ μεταξὺ* 21 b 9, 34 b 15, ἡ *ἰσχυρὰ ὀσμή* *περίει* 26 b 2—the sensation or act of smelling (ἡ *κατ' ἐνέργειαν ὀσφρησις*): ἡ *ὀσμή* *ποιεῖ* 24 b 6—the organ of smelling 23 b 19, ἡ *ὕδατος ἡ ἀέρος ἐστίν* 25 a 5.

*ὄτε*, τὸ 26 b 27.

*ὄτι*, τὸ 13 a 13.

*οὐρανός* 5 b 1, 7 a 2, b 6, 19 a 17.

*οὐς* 20 a 9, 13, 16, 17.

*οὐσία*: *τριχὺς λεγομένης τῆς οὐσίας* 14 a 15: joined with *φύσις* 2 a 8, with τὸ *τί ἐστὶ* 2 a 13 (cf. 2 b 24)—*τόδε τι καὶ οὐσία* 2 a 24, 16 b 13; 20 a 17, 20, 21, *γένος ἐν τι τῶν ὄντων* 12 a 6: *οὐσίαι μάλιστα δοκοῦσιν εἶναι τὰ φυσικὰ σώματα* 12 a 11, 15, *ὡς συνθέτη* 12 a 16, *τρίτον τὸ ἐκ τούτων* (ὅλης καὶ εἰδούς) 12 a 9 (cf. 14 a 16); *τῆς οὐσίας τὸ μὲν ὡς ἔλην ἔτερον δὲ μορφήν* καὶ *εἶδος* 12 a 7, 14 a 15 sq.; τῶν *συμβεβηκότων ταῖς οὐσίαις* 2 b 18 (cf. 2 a 8)—*οὐσία ὡς εἶδος* 12 a 19, ἡ *κατὰ τὸν λόγον* 12 b 10, 19, 13, ἡ *οὐσία ἐντελέχεια*, αὕτη δὲ *λέγεται διχῶς* 12 a 21, 22, *αἰτία ὡς ἡ οὐσία* 15 b 11, 12, τὸ *αἰτιον τοῦ εἶναι* *πᾶσιν* 15 b 13: *ἐκάστης αἰσθησεως* 18 a 25; (of νοῦς) *οὐσία τις* 8 b 19, *τῇ οὐσίᾳ ὡς ἐνέργεια* 30 a 18 (contrast τὴν *φύσιν εἶναι ὅτι δυνατόν* 29 a 21)—in criticism of Plato 5 b 32, 6 a 17, b 7, 14, 15, 7 b 1, 7.

*οὐχ ὅτι* 19 a 21.

*ὀφελος* 10 a 7.

*ὀφθαλμός*: *ὄλη ὄψεως* 12 b 20 (cf. 12 b 18 sq.), ἡ *κόρη καὶ ἡ δύς* 13 a 2, *ὁμωνύμως* 12 b 21: 19 a 5, 25 a 11.

*ὄψις*: sense of seeing (see II., c. 7): *οὐσία ὀφθαλμοῦ ἡ κατὰ τὸν λόγον* 12 b 19, *δύναμις* as opposed to *δρασις* 28 a 6, *μάλιστα αἰσθησίς ἐστὶ* 29 a 3: οὐ ἐστίν

18 a 26, *χρώματος* 18 a 13, *λευκοῦ καὶ μέλανος* 22 b 24, τοῦ δρατοῦ καὶ ἀοράτου 22 a 20, 24 a 11, τοῦ λαμποῦ 22 a 25; οὐχ ἐν τῇ ὄψει αἰσθάνεσθαι 25 b 20, κρίνει τὸ σκότος 22 a 21, καὶ τὸ φῶς 25 b 21 sq., *λευκὸν καὶ μέλαν* 26 b 11, δι' ἐτέρων αἰσθάνεται 34 b 15, τὸ σφόδρα λαμποῦν ἢ ἱσπερὸν φέρεται 26 b 1: *κίνησις τις αἰσθητῇ ἀφῇ καὶ ὄψει* 18 a 20, τῇ ὄψει τὸ γλυκὺ αἰσθανόμεθα 25 a 22, τῇ ὄψει αἰσθάνεσθαι ὅτι ὁρᾷ 25 b 13, ἢ τῆς ὄψεως αἰσθησις 25 b 16, distinguished as αἰσθητὸν from *χρῶμα* 25 b 14: ὅψιν ἔχει τὸ ζῶον ὅπως ὁρᾷ 35 b 21: 12 b 20, 13 a 1, 3, 15 a 5, 23 a 9, 24 b 23, 25 b 7, 18, 26 a 13, 21—eye, organ of vision 19 a 13, 23 b 18, 35 a 8—(criticism of earlier thinkers) visual ray τὴν ὄψιν ἐξίουσιν ἀνακλᾶσθαι 35 a 6.

*πάθημα*: (= *πάθος*) 3 a 11, (= τὸ ποιητικὸν *πάθος*) 3 a 20.

*πάθησις* opposed to *ποίησις* 26 a 10.

*παθητικός*: σῶμα 24 b 14, νοῦς 30 a 24.

*πάθος*: attribute, accident (like *συμβεβηκός, ἴδιον*); τὰ *πάθη* joined with *ἔργα* 3 b 12, 8 a 4, 9 b 15, with *ἔξεις* 32 a 6; *λόγοι ἐνυλοὶ εἰσιν* 3 a 25; τῆς ὕλης τὰ μὴ χωριστὰ 3 b 10, τοῦ ἀπτοῦ ἢ ἀπτὸν 24 b 25; 2 a 9, 3 a 3, 16 b 15, 17, 8 b 26, 19 a 33, 25 a 12; τοῦτο τὸ *πάθος* (*νόησις*) ἐφ' ἡμῶν 27 b 18—in a narrower sense, emotion 29 a 7, τοῦ φοβουμένου 3 a 24—effect, opposed to *ποίησις*: ἐν τῷ ποιοῦμένῳ ἐστὶ 26 a 2.

*παῖς* 17 b 31.

*πάμπολλα* 33 b 2.

*πανσπερμία* 4 a 4.

*παντελής* 4 a 20, 27: *παντελῶς* 12 b 1.

*πάντη* 2 a 10, 13 a 29, 19 b 30, 30 a 5, 6 (*δύς*).

*πάντως* 2 a 10.

*παραδέχεσθαι* 8 a 8.

*παραδιδόναι* 5 b 29, 7 b 27, 9 b 19, 12 a 3.

*παραλαμβάνειν* 3 b 27.

*παράλογος* 11 a 14, 15.

*παραπλήσιον* 7 b 24, 14 a 2—*παραπλησίως* 5 a 29, b 14, 6 b 17, 14 b 28.

*παρασκευάζειν* 16 b 19.

*παραχωρεῖν* 10 b 25.

*παρεῖναι* 28 a 8, b 27, 28; τὰ *παρόντα* 31 b 8.

*παρεμφανόμενον* 29 a 20.

*παρεὼν* (Emped.) 27 a 23.

*παρέχειν* 4 a 9, 11.

*παρίσταται* (Emped.) 27 a 25.

*παροξύνεσθαι* 3 a 20.

*παρουσία* 18 b 16, 20.

*πᾶς*: τὸ *πᾶν* 4 a 26, 5 a 19, 6 b 30, 7 a 3, 11 a 23, 16 a 3—*διὰ παντός* 4 a 6, μάλιστα πάντων 5 a 16.

*πάσχειν*: οὐχ ἄπλοιν τὸ *πάσχειν*, ἀλλὰ τὸ μὲν φθορά *τις*, τὸ δὲ σωτηρία ἄλλον 17 b 2 (cf. 17 b 14, 18 a 3)—*κατὰ κοινὸν* *τι* 29 b 29—*ἡ τοῦ ποιητικοῦ ἐνέργεια ἐν τῷ πάσχοντι* 26 a 5 (cf. 26 a 10)—con-

trasted with *ποιεῖν* 3 a 6, 7 b 18, 11 b 3, 17 a 2, 26 a 5, 10, 28 b 17, 29 b 26, 30 a 19, 35 a 5; joined with *κινεῖσθαι* 16 b 33, 17 a 17, 34 b 29, with *κινεῖσθαι* and *ἐνεργεῖν* 17 a 15, with *διατιθέναι* 14 a 11, with *ἀλλοιοῦσθαι* 31 a 5: *πάσχειν* *τι* 24 a 1, 29 b 25, *πάσχειν* *τι καὶ κινεῖσθαι* 10 a 25, *πάσχειν* *τὰ εἶδη* 27 a 9 (cf. 24 b 2 sq.); *ὄξει ὁ ἀήρ ὥσπερ παθὼν* *τι* 24 b 16, 18; *τί ἐστὶ τὸ ὁσμᾶσθαι παρὰ τὸ πάσχειν* *τι* 24 b 17: *πάσχει* *τι* τὸ σῶμα 3 a 18, ἡ ψυχὴ 8 b 23, ἡ τροφή 16 a 34, τὸ αἰσθητικὸν 19 a 17, *πάσχει* τὸ ἀνθρώπινον, *πεπονθὸς δ' ὁμοῖον ἐστίν* 17 a 20 (cf. 16 b 35, 17 a 19, 18 a 5); *πάσχειν* ὑπὸ τοῦ αἰσθητοῦ 18 a 23, 34 b 29, ὑπὸ τοῦ γενεστοῦ 22 b 2, ὑπὸ τῶν ἀπτῶν 24 a 34 (cf. 24 a 23), ὑπὸ τοῦ νοητοῦ 29 a 14—of objects devoid of sense ὑπ' ὁδμῆς 24 b 3, 7, τὰ φυτὰ *πάσχει* *μετὰ τῆς ὕλης* 24 b 3—of inanimate objects 24 b 13, 15, 35 a 7—is the case with: *πέπονθεν* 10 b 27, 24 a 14, 30 a 13.

*πατάξει* 20 a 24, 23 b 16.

*πεζὸς* 19 b 1, 20 b 25.

*πεῖθειν* 5 b 3, 28 a 23.

*πειθᾶ* 28 a 23.

*πεῖνα* 14 b 11, 12.

*πειράσθαι* 8 a 4, 12 a 4, 13 a 12, 21 b 19.

*πέλεκυς* 12 b 12, 14, 15, *πελέκει εἶναι* 12 b 13.

*περαίνεσθαι*: ὁρισμοὶ 7 a 31.

*πέρας* 7 a 24, 16 a 17, 35 a 10: point 27 a 13.

*περατοῦν* 7 a 28.

*περί*: in the title of a treatise or course of lectures, ἐν τοῖς *περί φιλοσοφίας* 4 b 19, *περὶ τοῦ ποιεῖν καὶ πάσχειν* 17 a 2, *περὶ τῶν στοιχείων* 23 b 29, *περὶ ἀναπνοῆς καὶ ἐκπνοῆς καὶ ὕπνου καὶ ἐγρηγόρευσης* 32 b 11: more vaguely *περὶ αὐτῆς* (τροφῆς) 16 b 31, *περὶ τούτων* 17 b 28, *περὶ ὧν τῆς διαφορᾶς* 27 b 26, *περὶ αὐτοῦ* 33 b 20: the cross reference, if any, in another form without *περὶ* 6 a 3, 7 b 12, 29, 17 a 17, 19 a 7, 31 b 19.

*περιέχον*, τὸ 4 a 10, 11 a 19, 18 b 22.

*περικάρπινον* 12 b 2 (*δύς*).

*περιτείνειν* 23 a 3.

*περιφέρεισθαι* 8 a 30.

*περιφορά* 7 a 21 (*δύς*), 22, 23, 30, 31.

*περιφύεσθαι* 23 a 7.

*πέττειν* 16 a 33, b 5, 7, 28.

*πεφυκέναι* 2 b 11, 6 b 21, 11 b 7, 13 a 5, 14 a 26, 18 a 25, 22 a 28, 34 b 2.

*πέψις* 16 b 29.

*πηγνύον* 4 a 15.

*πηδάλιον* 16 b 26.

*πηροῦν* 25 a 10.

*πήρωμα* 15 a 27, 32 b 22, 24.

*πιθάνος* 7 b 27.

*πικρὸς* 22 b 8, 25 b 1; contrasted with *γλυκὺς* 21 a 27, 22 b 12, 25, 26 b 2, 11, 27 a 1.

*πιστεύειν* 24 b 24, 28 a 21, b 4.

*πίστις* 2 a 11, 28 a 20, 21, 22, 23.

*πλάνη* 2 a 21.



- πλάτος 4 b 21.  
 πλάττειν 6 a 27, 11 b 18.  
 πλεοναχῶς 12 b 8, 13 a 22.  
 πλεῦμων 20 b 24.  
 πληγῇ 19 b 10, 14, 17, 20, 20 b 27, 35 b 11; οὐ γίνεταί ἀνευ φορᾶς 19 b 13.  
 πληῖθος 5 a 2.  
 πλὴν: preposition 5 b 8, 14, 35 a 7; πλὴν τῷ φοβερῷ and the like 21 a 15, 32 a 10, b 22; τίς ἂν εἴη διαφορά πλὴν θέσις 9 a 21; with participle 5 a 15; πλὴν οὔ 29 a 28, 35 a 1, πλὴν εἰ 5 b 9; pleonastic πλὴν εἰ μὴ κατὰ συμβεβηκός 6 b 8.  
 πλήρης 11 a 8, 22 b 9.  
 πλήττειν 19 b 15, 21, 22, 20 a 1, 23 b 15, 16, 17.  
 πλινθος 3 b 6.  
 πλοῖον 6 a 7, 13 a 9.  
 πλωτήρ 6 a 6, 10, 13 a 9.  
 πνεῦμα 20 b 20, 21 b 15.  
 ποδιαῖος 28 b 3.  
 ποιεῖν: without object, =act, ἐνεκά του 15 b 16, κατὰ τὴν ἐπιστήμην 33 a 5—act upon 23 b 14, 24 a 2, b 10, 12, 26 a 10, ἐν τῷ ποιουμένῳ (=πάσχειν) 26 a 2 (cf. 26 a 10); contrasted with πάσχειν 3 a 7, 7 b 18, 11 b 2, 17 a 2, 26 a 10, 28 b 16, 29 b 26, 30 a 19, 35 a 5—cause, produce, διαφοράν τῶν ζώων 13 b 33, ἕτερον οἶον αὐτὸ 15 a 28, ὑμένα 23 a 3, αἰσθησιν 17 a 4, 19 a 3, 30, τὴν αἰσθησιν 19 a 26, 35 a 16, ψόφον 19 b 14, 10, πληγὴν 19 b 17, σκιάν 19 b 32, χυμοῦ αἰσθησιν 22 a 17, τὴν ὁσφρησιν, τι 24 b 6, οὕτε αἰσθησιν οὕτε φθίσιν 34 b 20, μὴθὲν 32 b 21, 34 a 31, πάντα 30 a 12, 15, ἐν ἐκ πλείωνων φαντασμάτων 34 a 10, κύκλῳ φέρεσθαι 7 b 10, ἀκούειν 19 b 34, μεταβάλλειν 34 b 30, ὥστε ὁθεῖν 34 b 31—with predicate δῆλον 25 b 10, τοιανδὶ 31 a 18, οἶον αὐτὸ ἐνέργεια 24 a 1, νοητὸν 29 b 29, τὰ δυνάμει χρώματα ἐνέργεια χρώματα 30 a 16 (cf. 31 a 5), ἐν 30 b 6, 18; πρὸ δμμάτων τι ποιήσασθαι 27 b 19—pregnant =τῷ λόγῳ ποιεῖν: ἀρχὰς σωματικὰς 4 b 31, 50 b 14, 19, 23, 10 b 22, 11 a 3—describe in verse 4 a 29.  
 ποιησις 26 a 2, 9.  
 ποιητικὸς: τὸ αἴτιον καὶ ποιητικὸν 30 a 12; ἡ τοῦ ποιητικοῦ καὶ κωμητικοῦ ἐνέργεια 26 a 4 (cf. 14 a 11); τοῦ ποιητικοῦ καὶ ἐνέργεια ὄντος 17 a 18, τὰ ποιητικὰ τῆς ἐνέργειας 17 b 20, τὸ ποιητικὸν ἐντελέχεια αὐτοῦ 22 b 15—predicative 16 b 15.  
 ποῖος: the category 2 a 24, 10 a 14, 20—ποῖος τις ἂν γίγνοιτο 29 a 25.  
 ποῖος τις 7 b 20, 21 a 8.  
 πολέμιος 31 b 6.  
 πολλάκις 7 a 14, 31, 32, 17 a 31, 32 b 30.  
 πολλαχού 4 b 1.  
 πολλαχῶς 8 a 11, 10 a 13, 15 b 9.  
 πολλοί, οἱ 5 a 29.  
 πολυμερής 11 b 11.  
 πορεία 32 b 26.  
 πορευτικός 32 a 14, 34 a 33, b 25.  
 πόροι: τῶν φλεβίων καὶ τῶν πόρων 22 a 3.  
 πόρρω 28 b 29, 35 a 4.  
 πόρρωθεν 21 b 12, 16, 23 b 6.  
 ποσόν: the category 2 a 24, 10 a 14, 20, 21 (δύς)—τὸ ποσόν (=πληθος) 9 a 13, 15—predicative 16 a 25, ποσόν τι 16 b 12; τὸ κατὰ ποσὸν ἀδιαίρετον 30 b 14.  
 ποσὸς 22 a 14: opposed to ἀποτος 22 a 31, 34.  
 ποῦς 6 a 9.  
 πρᾶγμα 3 b 2, 4 b 18, 25, 27, 9 b 27, 13 a 20, 28 b 6, 9, 30 a 20, 31 a 1, b 17, 25, 32 a 3; καθ' ὁμοιότητα τῶν πραγμάτων 21 b 1; ὥς χωριστὰ τὰ πράγματα τῆς ὕλης 29 b 22.  
 πραγματεύεσθαι 2 a 18.  
 πρακτικός: νοήσεις 7 a 23, νοῦς 33 a 14, 16, διάνοια 33 a 18.  
 πρακτὸς 32 b 27; τὸ πρακτὸν ἀγαθὸν 33 a 29, b 16; πρακτὸν ἐστὶ τὸ ἐνδεχόμενον καὶ ἄλλως ἔχειν 33 a 29.  
 πράξις 31 b 10 (δύς), 33 a 17; joined with ἐνέργεια 15 a 19.  
 πράτης 3 a 17.  
 πράττειν 15 b 1, 33 a 8, 34 a 7; κατὰ φύσιν 15 b 2, κατὰ τὰς φαντασίας 29 a 5, κατὰ τὴν ἐπιθυμίαν 33 a 3.  
 πρεσβύτης 8 b 21.  
 προαίρεσις 6 b 25.  
 προγενής: παρὰ τῶν προγενεστέρων 3 b 27, προγενέστατον 10 b 14.  
 προγενεατίζειν 22 b 7.  
 προέρχεσθαι 3 b 21, 18 a 28.  
 προίεναι ἐπὶ τὸ ἀπειρον 11 b 13.  
 προσαγορεύειν 16 b 24.  
 προσγίγνεσθαι 16 b 3.  
 προσδιορίξειν 7 b 16, 21, 14 a 23.  
 προσεννοεῖν 30 b 1.  
 προσέτι 7 b 3.  
 προσήκειν 10 b 2, 11 b 16.  
 προσλαμβάνειν 7 a 29.  
 προσπεφυκὸς 23 a 16.  
 προστιθεῖναι 15 b 28.  
 πρότερος: οἱ πρότεροι 3 b 21; οἱ πρότερον 12 a 3, 14 a 22, 26 a 20; πρότερον εἰρηται and the like 6 a 3, 5 a 14, 9 b 17, 28 a 16, 29 b 30, 31 a 21: προτέρα τῇ γενέσει 12 a 26, χρόνῳ προτέρα ἐν τῷ ἐνί, ὅλως δὲ οὐ χρόνῳ 30 a 21, 31 a 2, ἐν τῷ ἐφεξῆς ὑπάρχει δυνάμει τὸ πρότερον 14 b 30.  
 προτιθεσθαι 3 b 24.  
 πρῶτος: φιλόσοφος 3 b 16, ἐντελέχεια 12 a 27, b 5, ψυχῇ 16 b 22, 25, δύναμις 15 a 24, μεταβολῇ 17 b 17, ὕγρον 22 b 7, αἰσθητήριον 22 b 22, 24 a 24 (cf. 23 b 31), τὸ ὁρῶν 25 b 19, κίνησις 28 b 27, νόημα 32 a 12, κατὰ τόπον κινουῖν 34 b 32 (cf. 33 b 11): ἐν πρώτοις 2 a 4, ἐπὶ τῆς πρώτης (αἰσθήσεως) 25 b 17, ὅθεν πρῶτον 15 b 21—the former, οἱ πρῶτοι 17 a 30—predicative with δέεται 20 b 26—(earlier thinkers) τὸ κωμητικὸν τὴν φύσιν τῶν πρῶτων 5 a 4; τὰ στοιχεῖα πρῶτα τῶν ὄντων 10 b 15 (cf. 5 a 23); (Atomists) τῶν πρῶτων καὶ ἀδιαίρετων σωματῶν 5 a 10; (Hippoc.) ψυχὴν 5 b 5; (Plato)

μήκος, πλάτος, βάθος 4 b 20—πρώτως 5 a 7, 13 b 2, 14 a 13, μάλιστα καὶ πρώτως 3 b 29.

πῦρ 4 a 1, 2, b 14 (δὲ), 5 a 5, 13, b 18, 6 a 28, 11 a 10, 15, 16 a 2, 6, 9, 15, 18, 27 (δὲ), 17 a 4, 9, 18 b 12, 14, 16, 19 a 23, 25 a 5, 31 b 5.

πύρινος 35 a 12.

πυρώδης 19 a 3.

πῶς 7 a 27 and often.

ῥάδιος 7 a 34, 9 b 18.

ῥαδίως 32 a 31.

ῥαπίζειν 19 b 23.

ῥεῖν 5 a 27.

ῥίξαι: αἱ ῥίξαι τῷ στόματι ἀνάλογον 12 b 3 (cf. 16 a 4).

ῥυσμός 4 a 7.

σάρξ: μεικτὸν ἐκ γῆς καὶ τούτων (ἀέρος καὶ ὕδατος) βούλεται εἶναι 23 a 14; λόγος τῆς μείξεως καθ' ἣν σὰρξ 8 a 15; τὸ θερμὸν καὶ τὸ ψυχρὸν καὶ ὦν λόγος τις ἡ σὰρξ 29 b 16; ἡ σὰρξ καὶ ἐν τοῖς ἄλλοις τὸ ἀνάλογον 22 b 21; τὸ μεταξὺ τοῦ ἀπτικού ἡ σὰρξ 23 b 26 (cf. 22 b 21, 23 a 1, b 17); οὐκ ἔστι τὸ ἔσχατον αἰσθητήριον 26 b 15: τὸ σαρκὶ εἶναι 8 a 25, 29 b 12, 17 (contrast ἡ σὰρξ οὐκ ἀνευ τῆς ὕλης, ἀλλ' ὥσπερ τὸ σιμῶν, τότε ἐν τῷδε 29 b 13 sq.)—9 b 32, 23 a 2, 19, 25, 31 b 15.

σαφής 19 b 28.

σεῖσθαι 20 a 26.

σελήνη 5 b 1.

σημαίνω 10 a 14, 35 b 24, 25.

σημαντικός 20 b 32.

σημεῖον: evidence 19 a 11, (v.l. μηνύει) 3 a 19, 20 a 15, 21 a 1, 23, 22 b 5, 23 a 1, 32 b 24—impression 24 a 20, 21, 35 a 9—point 27 a 12.

σῆπescθαι 11 b 9.

συγῇ 22 a 23.

σίδηρος 5 a 21, 24 a 19.

σιμός 29 b 14, 19, 31 b 13 (δὲ).

σκέπασμα 3 b 4, 12 b 2.

σκέπτεσθαι: σκεπτόν 2 b 1 and often.

σκέψις 7 b 12, 13 a 21, 15 a 14.

σκιά 19 b 32.

σκληρός 35 b 14: contrasted with μαλακός 22 b 27, 23 b 4, 24 a 3.

σκληρόσαρκος 21 a 25.

σκληρόφθαλμος 21 a 13, b 28, 30.

σκοτεινός 18 b 29.

σκότος 18 b 11, 18, 31, 19 a 3, 23, b 30, 22 a 21, 23, 24 b 10, 25 b 21; τί ἐστι 18 b 18.

σκώληξ 28 a 11.

σπέρμα 12 b 27.

σπύργος 19 b 6.

στάσις opposed to κίνησις 12 b 17, 13 a 24, 25 a 16.

στερεῖσθαι 16 b 19.

στερεός 4 b 24, 18 b 7, 19 b 7, 20, 23 a 13.

στέρησις 18 b 19, 30 b 21.

στερητικός 17 b 15.

στερiscosθαι 35 b 5.

στιγμή 3 a 14, 7 a 12, 13, 9 a 4, 6, 12,

20, 22, 23, 25, 26, 27, 29, 30, b 4, 5, 7, 27 a 10, 30 b 20.

στοιχεῖον: μίαν τινὰ αἰτίαν καὶ στοιχεῖον ἐν 5 b 17, στοιχεῖα καὶ ἀρχὰς 10 a 19; ὅλην ἔοικε 10 b 11; διαφοραὶ αἱ τὰ στοιχεῖα διορίζουσι 23 b 28; τῶν σωματικῶν ἢ τῶν στοιχείων 16 a 11; τοῖς σωματικοῖς 10 a 28, μάλιστα ἀσώματον 5 a 6: ἡ μείξις τῶν στοιχείων 8 a 15 (cf. 8 a 17, 10 a 2), πᾶν ἦτοι στοιχεῖον ἢ ἐκ στοιχείου ἐνός ἢ πλείονων ἢ πάντων 10 b 8, ἐκ τῶν στοιχείων 4 b 11, 17, 25, 5 b 10, 14, 6 b 28, 9 b 24, 10 a 21, b 17, 22, 11 a 3, 25; πάντα τὰ στοιχεῖα 5 b 8: 4 a 5, 10 a 7, 17, b 6, 15, 17 a 5, 35 a 20, b 3—ἐν τοῖς περὶ τῶν στοιχείων 23 b 29—(Platonic) ἐκ τῶν στοιχείων οἱ ἀριθμοὶ 4 b 25.

στόμα 12 b 3.

στοργή (Emped.) 4 b 15 (δὲ).

στρατηγεῖν 17 b 32.

στρυφνός 22 b 13.

συγγενής 8 a 8.

συγκείσθαι 7 b 31.

συγκεφαλαιοῦν 31 b 20.

συλλογισμός 7 a 27, 34, 34 a 11.

συμβαίνειν: (of attendant circumstances)

happen, οὕτως ὁρῶμεν συμβαίνειν, οὗτο or ὅπερ συμβαίνει and the like 13 b 20, 29 b 7, 33 b 6, 8 b 21, 30 a 2, 3 a 20, 23, 8 b 9, 10 b 30, 13 b 10, 14 a 2, 15 b 29, 16 b 34, 19 b 28, 20 a 13, 23 b 17, 28 b 18—(logical consequence) result, follow 2 b 26, 9 a 15, 20 b 3, 23 b 23, 26 a 25 (δὲ), 28 b 4—especially when the consequences of a theory are urged as objections against it συμβαίνει ἀμφοτέρως ἀποπον καὶ παράλογον 11 a 13, Ἐμπεδοκλεῖ ἀφρονέστατον εἶναι τὸν θεὸν 10 b 4, so 7 b 13, 8 a 16, b 34, 9 a 31, b 7, 12, 25, 10 a 22—to be conjoined with as attribute or accident τῷ εὐθεῖ, ἢ εὐθεῖ, πολλὰ συμβαίνει 3 a 13, so 2 a 8, 18 a 22, 25 a 26, 28 b 20, 35 b 12, συμβέβηκε τοῖς αἰσθητοῖς 28 b 24: hence τὰ συμβεβηκότα, like πάθη, = attributes, accidents 2 b 18, 21, 23, 26, 9 b 14, 17 a 6, 28 b 23: κατὰ συμβεβηκός = per accidens 2 a 15, 6 a 14, 17, 19, b 5, 8, 7 b 7, 8 a 31, 14 b 9, 16 b 11, 18 a 9, 20, 21, 25 a 15, 25, 28, 30, 26 b 26, 28 b 2, 30 b 16, 35 b 10.

συμβάλλεσθαι 2 a 5, b 21, 14 b 10.

συμπααραλαμβάνειν 3 b 22.

συμπάσχειν 27 b 22.

συμπερασμα 7 a 27, 13 a 16, 18.

συμπύπτειν 25 a 23.

συμπλέκειν 4 b 29, 6 b 28, 9 b 11.

συμπλοκή: δόξης καὶ αἰσθήσεως 28 a 25, 29, νοημάτων 32 a 11.

σύμπτωμα 34 a 32.

συμφανής 5 b 22.

συμφυής 20 a 4, 12, 23 a 5.

σύμφυτος 6 b 30.

συμφωνία 24 a 31, 26 a 27, 29, b 6.

συμφωνοὶ φορεῖ 6 b 31.

συνάγειν 4 a 10, 15.

συναίτιον contrasted with αἴτιον 16 a 14.

- συνανείργειν 4 a 15.  
 συναπτειν 6 b 31, 7 b 15.  
 συναρμόζειν 8 a 8.  
 συνδοκεῖν 7 b 5.  
 σύσεις 10 b 3.  
 συνεφέλλειν 6 b 21.  
 συνεχῆειν 10 b 12, 11 b 6, 8, 13, 16, 17, 18, 16 a 6.  
 συνεχεῖα: κοινωνεῖν 15 b 3, εἰς 20 a 3.  
 συνεχῆς 7 a 9, 10, 19 a 14; joined with εἰς 7 a 7, 19 b 35; μετὰ συνεχούς 29 b 19, ἐν τῷ συνεχεῖ 9 a 14, 30 b 19, τῇ ἀποφάσει τοῦ συνεχούς 25 a 19—συνεχῶς κινεῖσθαι 4 a 19, 5 a 32.  
 σύνθεσις: μεγεθῶν 8 a 7, ἐναντίων 7 b 31, τῶν μειχθέντων 7 b 33, τῶν τοῦ σώματος μερῶν 8 a 10, 11, 12; joined with λόγος 10 a 8, with λόγος τις 10 a 2; νοημάτων 30 a 27, ἐν συνθέσει 30 b 2.  
 σύνθετος; οὐσία 12 a 16; τὰ σύνθετα 10 a 1.  
 συνιστάναι 5 a 26, b 16, 24, 6 b 28, 10 a 19, 16 a 16, 23 a 13.  
 σύνολον 9 b 31.  
 συντηκτικός 22 a 19.  
 συντιθέναι 30 a 30, 31, b 1, 3.  
 συρριζοῦσθαι 15 b 29.  
 σφαῖρα: sphere 3 a 14, 34 a 13; spherical atoms 6 b 21, 9 b 9; ball 19 b 27.  
 σφαιρίον 9 a 12.  
 σφαιροειδής 4 a 2, 6, 5 a 12.  
 σφῶδρα 21 a 31, 24 a 32, 26 b 1, 29 b 1, 3.  
 σφοδρῶς 19 b 22.  
 σχεδόν: δύο ταῦτα 3 b 28, διεληλυθήμεν 9 b 23, αὐτὰ 22 b 14.  
 σχῆμα: μέγεθος τι 25 a 18: one of the common sensibles 18 a 18, 25 a 16, 18: shape, imprint 12 b 7, 35 a 7—geometrical figure οὐκ ἔστι σχῆμα παρὰ τὸ τρίγωνον καὶ τὰ ἐφεξῆς 14 b 21, so 14 b 23, 24, 28, 30—atomic shape 5 a 11 (his)—atom 4 a 2, 11.  
 σώζειν: φύσιν 11 b 23, οὐσίαν 16 b 14, αὐτὸ αὐτὸ 16 b 17, τὸ ἔχον 16 b 18, τὸ ζῶον 34 b 14, 17, 26; σωζομένου τοῦ πράγματος 28 b 6, σωζόμενον 22 b 3; σώζεσθαι opposed to φθείρεσθαι 26 a 17.  
 σῶμα: ἅπαν ἀπτόν, αἰσθητὸν ἀφῆ 34 b 12 sq., ἀπταί εἰσιν αἱ διαφοραὶ τοῦ σώματος ἢ σώμα 23 b 27; δύο σώματα ἅμα ἐν τῷ αὐτῷ εἶναι ἀδύνατον 18 b 17 (cf. 9 b 3)—οὐσία μάλιστα τὰ φυσικὰ σώματα 12 a 11, τῶν ἄλλων ἀρχαὶ 12 a 12; φυσικὸν σῶμα in a narrower sense 12 b 12, 15 b 18; τὰ ἐνταῦθα 25 a 13, τὸ ἄνω 18 b 9, 13; τὰ ἀδιάσπαστα 5 a 10, σωματῶν ἢ στοιχείων 16 a 11, ἀπλοῖς σώμασι 16 a 28; ἀνάγκη τὸ σῶμα εἶναι ἢ ἀπλοῦν ἢ μεικτὸν 34 b 9; τὸ ὕγρον οὐκ ἔστιν ἀνευ σώματος 23 a 25; ἀλλότριον σῶμα 22 a 9—οὐχ ἀπλοῦν τὸ τοῦ ζῴου σῶμα 35 a 11, 34 b 10 (cf. 34 a 28, 23 a 13), σύνκειται ἐξ ἐναντίων 7 b 31, ἐξ ἀέρος ἢ ὕδατος ἀδύνατον συστήναι τὸ ἔμψυχον σῶμα, δεῖ στερεόν τι εἶναι 23 a 13 (cf. 35 a 20), κινεῖται φορᾶ 6 b 1, τὸ δυνάμει δὲν 13 a 2, οὐ τῶν καθ' ὑποκειμένων, μᾶλλον δ' ὡς ὑποκειμένων καὶ ὅλη 12 a 18 sq., οὐκ ἔστιν ἐντελέχεια ψυχῆς, ἀλλ' αὕτη σώματος τινος 14 a 18, δυνάμει ζωὴν ἔχον 12 a 20, 27 (cf. 12 a 15, 16 sq., b 5), τὸ ζῶν σῶμα 12 b 23, 15 b 8, τὸ ἔμψυχον 15 b 11, 16 b 10, 35 a 14, τὸ αἰσθανόμενον 9 b 2, τὸ αἰσθητικὸν 12 b 25, τὸ ἀπτικὸν 35 a 14, 34 b 13, πορευτικὸν 34 a 33, μὴ μόνιμον 34 b 8 (cf. 34 b 4); ἐν ἡ ψυχῇ καὶ τὸ σῶμα 12 b 6, ἡ ψυχὴ καὶ τὸ σῶμα ζῶον 13 a 3—κατὰ τὸ σῶμα 6 b 2, 8 a 17, μετὰ σώματος 3 a 17, 15, 7 b 4, οὐκ ἀνευ σώματος 3 a 6, 10, 14 a 20, 23 a 25, 29 b 5.  
 σωματικός: ἀρεταὶ 8 a 2, στοιχεῖα 10 a 28, τὸ νοεῖν 27 a 26, ὃ κινεῖ ὀργάνῳ 33 b 19; opposed to ἀσώματος of ἀρχαὶ 4 b 31.  
 σωματῶν 9 a 11.  
 σωρὸς 19 b 24.  
 σωτηρία 17 b 3.  
 τάχος 20 a 33.  
 ταχὺς 20 a 32, b 4: ταχὺ adverbial 19 b 25—ταχέως 19 b 22, 24 b 18, θάπτον 23 a 5.  
 τεκτονική 7 b 25.  
 τέκτων 3 b 13, 16 b 1, 2.  
 τέλειος opposed to πῆρωμα 15 a 27, 32 b 23.  
 τελείσθαι: τοῦ τετελεσμένου 31 a 7.  
 τελευταῖον (adverb) 15 a 7, 16 b 3.  
 τελευτή opposed to ἀρχή 33 b 22, 23.  
 τέλος: 15 b 17, 16 b 23, 24, 33 a 15, τέλος ἔχειν 7 a 27, εἰς τέλος ἐλθεῖν 34 b 1, διὰ τέλους 13 a 30, 32 b 21.  
 τέμνεσθαι 31 b 24.  
 τετραγωνισμός 13 a 17, 19.  
 τετράγωνον 14 b 31.  
 τέχνη 7 b 26, 30 a 12.  
 τεχνίτης 3 b 13.  
 τῇ μὲν...τῇ δὲ 26 a 22.  
 τί ἐστι: ὀργή τί ἐστι and the like 3 a 30, 2 a 23, 12 a 5, b 10, 13 a 17, 15 a 15, 16, 17, 18, 16 b 30, 18 b 3, 29 a 8 and elsewhere—τὸ τί ἐστι: joined with οὐσία 2 a 13; πάσης ἀποδείξεως ἀρχή 2 b 26, ὁ νοῦς τοῦ τί ἐστι 30 b 28, κοινὴ μέθοδος περὶ τοῦ τί ἐστι 2 a 17, τὸ τί ἐστι γινώσκειν 2 b 17, εἰδέναι 2 b 22.  
 τί ἦν εἶναι: see εἶναι.  
 τίς interrogative 7 a 18, 9 b 31: see also τί ἐστι—τινὲς indefinite: distinguished from πάντες 14 a 30, from τῷ τυχόντι 34 b 25; τινὶ distinguished from ἀπλῶς 31 b 12; περὶ τινῶν 3 b 13; τινὸς πρὸς τι καὶ ἐν τινι 19 b 10 (cf. 19 b 12, 20 b 15); τί κατὰ τινος 30 b 26, 28 sq.; ἐνεκά του 15 b 16 and often, μέχρι του 34 b 30—τί τοιοῦτον 3 a 31, 5 b 25, 29 a 15, 32 b 29.  
 τὸ the article τὸ οὐ ἐνεκα διττόν, τὸ μὲν οὐ, τὸ δὲ ὡς 15 b 2, τὸ οὐ ἢ ὅλη 12 b 8—demonstrative pronoun 8 b 5, 16 a 13, 23 b 4; τὸ μὲν τι...τὸ δ' 11 a 21, 22; τί...τὸ μὲν...τὸ δὲ 9 a 13; τί τὸ μὲν...ἕτερον δὲ 30 a 10, 11.  
 τὸδε ἐν τῷδε 29 b 14—τὸδε ἢ τὸδε πράξει 34 a 8—τὸδε τοῖονδε 34 a 19.  
 τὸδε τι: one of the categories 10 a 14;

joined with οὐσία 2 a 24, 16 b 13; κατὰ τὸ εἶδος λέγεται 12 a 7, 8.  
 τοῖος (Homer) 27 a 26.  
 τοιοῦδ': σώμα 3 a 26, b 11, 12 b 11, 16, 27, ὅμμα 8 b 22, κόρη 31 a 18, ὕλη 3 b 3; ἢ τοιονδί καὶ κατὰ τὸν λόγον 24 a 24.  
 τόνος 24 a 32.  
 τόπος: πᾶσαι αἱ κινήσεις ἐν τόπῳ 6 a 16; οὐκ ἔστι τόπος τοῦ λευκοῦ ἢ τριπύχους 6 a 21; ὦν ὁ τόπος ἀδιαίρετος, καὶ αὐτὰ 9 a 24; ὁ περὶ τὴν καρδίαν 20 b 26; τόπον εἰδὼν 29 a 27; χωριστὸν λόγῳ ἢ καὶ τόπῳ 13 b 15, τόπῳ καὶ ἀριθμῷ ἀδιαίρετον 27 a 5; κατὰ τόπον 10 b 20, 11 a 29, b 22, 13 a 24, b 22, 14 a 32, b 17, 15 a 7, 16 a 22, 27 a 18, 32 a 17, b 8, 13, 33 a 13, 34 b 30, κατὰ τοὺς ἐναντίους τόπους 13 a 28; ἐν τῷ αὐτῷ τόπῳ 35 a 2.  
 τραχύτης (of vocal sound) opposed to λειότης 22 b 31.  
 τρέφειν: τρέφεσθαι τὸ ὁμοῖον τῷ ὁμοίῳ 16 a 30 (cf. 16 b 6 sq.), ξηροῖς καὶ ὑγροῖς καὶ θερμοῖς καὶ ψυχροῖς τρέφεται τὰ ζῶντα πάντα 14 b 8; τρέφεται οὐδὲν ὁ μὴ κοινωεῖ ζωῆς 15 b 27 (cf. 16 b 9); μέτρι τοῦτου ἔστιν ἕως ἂν τρέφῃται 16 b 15 (cf. ὅσα τρέφεται τε καὶ ζῇ κτέ. 13 a 30 sq.): ἔστι τρία, τὸ τρεφόμενον καὶ ᾧ τρέφεται καὶ τὸ τρέφον 16 b 20, τὸ τρέφον ἔστιν ἡ πρώτη ψυχὴ 16 b 21 (cf. 16 a 9, 15 a 24), ᾧ τρέφεται διττὸν 16 b 25—16 a 11, 27, 29, 35, b 10, 16, 22, 23, 34 b 1, 20.  
 τρίγωνον 2 b 20, 14 b 21, 31.  
 τρίπυχος 6 a 19.  
 τριχῶς 14 a 14, 18 a 8.  
 τροφή: joined with αἰσῆσις 16 a 10, with αἰσῆσις and φθίσις 12 a 14, with γέννησις 15 a 23, with αἰσθητὸν and νοητὸν 15 a 22; τροφῇ χρῆσθαι ἔργον τῆς θρεπτικῆς ψυχῆς 15 a 26; ἡ τροφὴ τὸ σῶμα τὸ ἄπτον 34 b 19, δοκεῖ εἶναι ἡ τροφὴ τὸ ἐναντίον τῷ ἐναντίῳ 16 a 22 (cf. 16 b 6 sq.), ᾧ τρέφεται 16 b 23; πάσχει τι ὑπὸ τοῦ τρεφομένου 16 a 35, παρασκευάζει ἐνεργεῖν (τὸ τρέφον) 16 b 19; αἰσῆσιν ἔχειν ἄνευ τροφῆς ἀδύνατον 34 a 25, ἀναγκαῖον τὴν τροφὴν δύνασθαι πέττεσθαι 16 b 28 (cf. 16 a 33); πρὸς ἐμψυχόν ἐστι 16 b 11; ἔλκειν τὴν τροφὴν 12 b 4, λαμβάνειν 13 a 31; κίνησις ἡ κατὰ τροφὴν 13 a 24; ἕτερον τροφῇ καὶ αἰσθητικῷ εἶναι 16 b 12—14 b 6, 7, 10, 16 a 20, 26, 27, 29, b 1, 3, 13, 20, 30, 21 b 12, 34 b 18, 35 b 23.  
 τυγχάνειν: τυχῶν as adjective; ψυχὴ 7 b 22, σῶμα 7 b 23, μεῖζις 8 a 22, μόριον 20 b 14, γένος 34 b 25—τὸ τυχόν 7 b 19, 14 a 24, 25, τὰ τυχόντα 19 b 14—17 a 11, 18 a 28, 24 b 29, 25 a 23.  
 τύπος: τύπῳ διωρίσθω καὶ υπογεγράφθω 13 a 9, εἰρηται 16 b 30, 24 a 16.  
 τύπτω 19 b 12 (δῖς), 24, 20 a 20 (δῖς), 24 (δῖς), 25, b 14, 31, 21 a 1.  
 ὑγαίνω 14 a 7.  
 ὑγιαστικός: τὸ ὑγιαστικὸν 14 a 10.

ὕγλεια: εἶδος τι καὶ λόγος τοῦ ὑγιαστικοῦ 14 a 9 sq.—14 a 7, 8 a 2.  
 ὑγίης opposed to κάμνων 16 a 25.  
 ὑγραίνεισθαι 22 b 2, 3, 4.  
 ὑγρὸς 5 b 3, 22 a 14, 34, b 1, 4, 6; opposed to ξηρὸς 14 b 7, 13, 22 a 6, b 26, 23 b 29; τὸ ὑγρὸν οὐκ ἔστιν ἄνευ σώματος 23 a 24, τὸ ὑγρὸν ἀναγκαῖον ὕδωρ εἶναι ἢ ἔχειν ὕδωρ 23 a 25; τοῦ πρώτου ὑγροῦ 22 b 7; τὸ γευστὸν ἐν ὑγρῷ ὥς ὕλη 22 a 11; ἐν τῷ ὑγρῷ 22 a 4, 5.  
 ὑγρότης 22 a 18 (his), b 9.  
 ὕδωρ: joined with ἀήρ 18 b 6, 7, 19 a 33, b 18, 19, 21 b 9, 23 a 28 sq., b 11, 18, 24 b 30, 25 a 1, 4, 8; τὸ ὕδωρ τῷ πυρὶ τροφῇ, τὸ δὲ πῦρ οὐκ τρέφει τὸ ὕδωρ 16 a 26 sq.; διαφανές 18 b 6, 35 b 21 sq., οὐ φόβου κύριον 19 b 19; ἀδύνατον ἀψασθαι ἄλλο ἄλλου ἐν ὕδατι 23 a 28; ἄλλο ἔστιν ὕδωρ καὶ ὕδατι εἶναι 29 b 11—19 b 31, 20 a 11, 22 a 12, 23 a 25, 26, 27, 31, 35 a 4, 5 b 2—(Emped.) 4 b 13.  
 υἱός 18 a 21, 25 a 25, 26 (his), 29.  
 ὕλη: distinguished from λόγος and εἶδος 3 b 1, 3, 7, 16 a 18, 24 a 19, b 3, 34 a 30, from αἰτιῶν καὶ ποιητικῶν 30 a 10, from ἀρχῇ 30 a 19; joined with ὑποκειμένου 12 a 19, 14 a 14, with γένος 17 a 27; οὐσία ὡς ὕλη 12 a 7, 14 a 16; ἡ ὕλη δύναμις 12 a 9, 14 a 16; ἡ ὕλη καὶ τὸ οὐ ἡ ὕλη ἐν 12 b 8; ὁ ὀφθαλμὸς ὕλη δῖψως 12 b 20, ὁ φουσικὴ ὕλη τῶν ζώων 3 b 18, ἡ οἰκία 14 a 26; τὰ πάθη τῆς ὕλης 3 b 10, ἔργα καὶ πάθη 3 b 12—τὰ ἔχοντα ὕλην 30 a 6, τὰ ἄνευ ὕλης 30 a 3, ὅσα ἄνευ ὕλης 30 b 31; ἄνευ τῆς ὕλης 25 b 24, ἄνευ ὕλης 30 a 8, 32 a 10, οὐκ ἄνευ ὕλης 29 b 14—10 b 11, 16 b 1, 22 a 11, 29 b 22, 30 a 13.  
 ὑμῆν 23 a 3, b 9.  
 ὑπάρχειν: τοῖς ζώοις 2 a 10, τῇ ψυχῇ 3 b 25, τῷ λευκῷ 6 a 18 and often: ἐν σώματι 14 a 21 sq., ἐν ἀμφοτέροις τοῖτοῖς 19 a 35, and so often: ὑπάρχει ἀδύνατα 8 b 33.  
 ὑπαρχή: ἐξ ὑπαρχῆς 12 a 4.  
 ὑπεναντίας 9 b 22.  
 ὑπερβάλλειν 26 a 30, b 7.  
 ὑπερβολὴ 24 a 4, 35 b 8, 15, τῶν ἀπτόων 24 a 14, 35 b 13, 18, τῶν αἰσθητῶν 24 a 29.  
 ὕπνος: ἀνάλογον τῷ ἔχειν τὴν ἐπιστήμην καὶ μὴ ἐνεργεῖν (contrasted with ἐργαζομένης) 12 a 24 sq.—29 a 8, 32 b 11—ἐν τοῖς ὕπνοις 28 a 8.  
 ὑπογράφειν 13 a 10.  
 ὑποδεῖς: τὰ ὑποδεέστερα 29 b 4.  
 ὑποκειμένος: χρώμα 25 b 14, αἰσθητὸν 26 b 8, 10: τί τὸ ἐν τὸ ὑποκειμένον 22 b 32; τὸ ὑποκειμένον joined with ὕλη 12 a 19, 14 a 14; τῶν καθ' ὑποκειμένου 12 a 18.  
 ὑπολαμβάνειν (cf. λαμβάνειν): with εἶναι expressed or understood 2 a 1, 3 b 31, 4 a 8, 22, b 8, 5 a 5, 20, b 7, 8 a 12, 11 a 16, 16 a 13, 27 a 27; used absolutely 29 a 23; παραπλησίως 5 a 30, οὕτως 11 a 2, καλῶς 14 a 19.  
 ὑπόληψις: οὐκ ἔστιν ἄνευ φαντασίας 27 b 16; οὐχ ἡ αὐτὴ νόησις καὶ ὑπόληψις 27

b 17; τῆς ὑπολήψεως διαφοραὶ 27 b 25; τοῦ νοεῖν τὸ μὲν φαντασία δοκεῖ εἶναι τὸ δὲ ὑπόληψις 27 b 28; ἀληθὺς 28 b 3—ἡ καθόλου ὑπόληψις καὶ λόγος 34 a 17.  
 ὑπομένειν 19 b 21.  
 ὑψιστος 21 b 12.  
 ὕστερος: τὸ ζῶον τὸ καθόλου ἦτοι οὐθέν ἐστιν ἢ ὕστερον 2 b 8: ὕστερον ἐροῦμεν and the like 13 b 10, 14 a 1, b 14, 16, 16 b 31, 19 a 31, b 3, 31 b 19, 32 b 12.  
 ὑφάλλειν 8 b 13.

φαίνεσθαι: of presentation, whether to sense, ἰσχυρισμὸς or thought, πικρὰ 22 b 9, ἰσχυρισμὸς 22 a 13, ἀπορον 21 b 13, ποδιαλός 28 b 3, ἀπειρα 32 a 24, δύο 33 a 9, 17, ἀπλῶς ἡδὺ 33 b 8, τὰ πυρῶδη φαινόμενα 19 a 3, τὸ φαινόμενον ἀγαθὸν 33 a 28: absolutely 4 a 3, φαίνεται δὲ τι ἡμῖν 28 a 7, ὁράματα 28 a 16, ἀλλὰ μόρια φανεῖται 32 a 27, φαίνεσθαι 28 b 1, 2, οὐ φαίνεται δὲ 19 a 31: παρὰ τὰ φαινόμενα 18 b 24: (of earlier thinkers) τὸ ἀληθὲς εἶναι τὸ φαινόμενον 4 a 29, 27 b 3—with participle 4 a 20, 6 a 30, 7 a 15, 13 a 26, b 9, 17, 16 a 11, 21 b 23, 25 a 10, 31 a 4, 33 a 23, 34 a 2; with infinitive 3 a 5, 4 b 5, 6 b 24, 10 b 19, 22, 11 b 19, 14 a 24, 16 a 25, 19 a 35.

φάναι: φάναι μόνον καὶ νοεῖν 31 a 8; φήσῃ ἡ ἀποφήσῃ 31 a 16—ἐνδέχεται δὲ καὶ διαίρεσιν φάναι πάντα 30 b 4.

φαντάζεσθαι 33 b 12.

φαντασία (see III., c. 3): τὸ ὄνομα ἀπὸ τοῦ φάος εἰληφεν 29 a 3; καθ' ἣν λέγομεν φάντασμα τι ἡμῖν γίνεσθαι 28 a 1, ἡ κατὰ μεταφορὰν λεγόμενη 28 a 2; ἔτερον καὶ αἰσθήσεως καὶ διανοίας 27 b 14, 28 a 5sq., διαφέρει ἐπιστήμης, νοῦ, δόξης 28 a 17sq., λογισμοῦ 15 a 10sq., 33 a 12; δύναμις ἡ ἐξὶς καθ' ἣν κρίνομεν καὶ ἀληθεύομεν ἢ ψευδόμεθα 28 a 3; ἐστι καὶ ψευδὴς 28 a 18, b 17 (cf. 28 b 25—30), αἱ πλείους ψευδεῖς 28 a 12, καὶ ὁρθὴ καὶ οὐκ ὁρθή 33 a 27: τί ἐστὶ 29 a 8, κίνησις ὑπὸ τῆς αἰσθήσεως τῆς κατ' ἐνέργειαν γιγνομένη 29 a 1 (cf. 27 b 15, 28 b 11sq.); ἀπελθόντων τῶν αἰσθητῶν ἐνεῖσιν ἐν τοῖς αἰσθητηρίοις 25 b 25: εἰ αἰσθησιν, καὶ φαντασίαν καὶ δρέξιν 13 b 22, οὐκ ὁρεκτικὸν τὸ ζῶον ἀνευ φαντασίας 33 b 28, 29 a 5sq., 33 a 12, ἐνίοις ἀορίστως ἐνεσθιν 34 a 1—5 (contrast τοῖς μὲν τῶν ζῴων οὐδὲ φαντασία, τὰ δὲ ταύτη μόνῃ ζῴω 15 a 11, 28 b 16, 28 a 10sq., 22, 24, οὐκ ἀεὶ περσεῖται 28 a 9): αἰσθητικὴ 33 b 29, 34 a 5sq., λογιστικὴ 33 b 29, βουλευτικὴ 34 a 7, ἡ ἐκ συλλογισμοῦ 34 a 11: τοῦ νοεῖν τὸ μὲν φαντασία δοκεῖ εἶναι τὸ δὲ ὑπόληψις 27 b 28 (cf. 3 a 8sq.); νόσις τις 33 a 10; ἀνευ φαντασίας οὐκ ἐστιν ὑπόληψις 27 b 16: ἡ κατὰ τόπον κίνησις ἢ μετὰ φαντασίας ἢ ὁρέξεις 32 b 16, ἡ φαντασία θαναν κινῶ, οὐ κινεῖ ἀνευ ὁρέξεως 33 a 20; παρὰ τὴν ἐπιστήμην ἀκολουθοῦσι ταῖς φαντασίαις 33 a 11 (cf. 29 a 5—8): 14 b 16, 20 b 32, 27 b 29, 28 a 29: κατὰ τὴν φαντασίαν 27 b 23 (cf. 28 a 1, b 25):

in a wider sense=κατὰ τοῦτο δ φαίνεται ἡμῖν 2 b 23 (cf. 28 a 13sq.)—Platonic definitions rejected δόξα μετ' αἰσθήσεως, δι' αἰσθήσεως, συμπλοκὴ δόξης καὶ αἰσθήσεως 28 a 25sq.

φάντασμα 28 a 1: τῇ διανοητικῇ ψυχῇ τὰ φαντάσματα ὁλον αἰσθημάτων ὑπάρχει 31 a 15, πλὴν ἀνευ ὕλης 32 a 9; οὐδέποτε νοεῖ ἀνευ φαντάσματος ἢ ψυχῇ 31 a 17 (cf. 32 a 8); τὰ εἶδη τὸ νοητικὸν ἐν τοῖς φαντάσμασι νοεῖ 31 b 2; ὅταν ἐπὶ τῶν φαντασμάτων ᾗ, κινεῖται 31 b 4 (cf. 31 b 7): τὰ πρῶτα νοήματα τίνι διοίσει τοῦ μὴ φαντάσματα εἶναι 32 a 12—14: ἐν ἐκ πλείονων φαντασμάτων ποιεῖν 34 a 10.

φανταστικόν, τὸ 32 a 31.

φάος 29 a 3.

φάρυγξ 20 b 23, 21 a 4.

φάσις: ἐστὶ τι κατὰ τινος 30 b 26, ἀληθὺς ἢ ψευδὴς πᾶσα 30 b 27; distinguished from φαντασία 32 a 10.

φάσκειν 5 b 4.

φαῦλος: defective 22 a 32, τό τε μικρὰν ἔχον καὶ τὸ φαῦλην 21 b 8, μικρὸν ἢ φαῦλον 22 a 30—φαῦλως 21 a 10, 22 a 28.

φέρεσθαι 6 b 30, 7 b 6, 7, 10, 9 b 10, 10 b 29, 16 a 1, 6, 18 b 21, 19 b 24: ἐπὶ ταῦτο 4 a 21.

φείγειν: opposed to διώκειν 31 a 10, 16, b 9, 32 b 28, 30, 33 a 2, τὸ ὁρέγεσθαι 32 b 17, τὸ λαβεῖν 34 b 17.

φευκτικὸν 31 a 13.

φευκτὸς 7 b 3: opposed to διωκτὸς 31 b 3, 32 b 28.

φθάνειν 19 b 23.

φθαρτικός: τῆς γένεως 22 a 31, opposed to κατὰ φύσιν 22 a 33: τὰ φθαρτικά 24 a 15.

φθαρτός 30 a 25: τὸ φθαρτὸν opposed to τὸ αἰδιον 13 b 27: τῶν φθαρτῶν 15 a 9, b 4.

φθελειν 24 a 29, 26 a 30, b 7, 35 b 12, 13, 15: φθελειναι S a 28, b 19 (bis), 25, 27, 21 b 23, 26 a 17, 34 a 33.

φθίνειν 15 b 26, 34 a 26.

φθίσις: κίνησις τις 6 a 13, joined with αὔξη and ἀκμὴ 11 a 30 (cf. 34 a 25), with αὔξεσις 12 a 15, 13 a 25, 27, 15 b 26, 32 b 9, 34 b 21, with ἀκμὴ 32 b 25.

φθόρα 3 b 4, 17 b 3, 34 a 23.

φιλῶν 3 a 18, 8 b 26, 28.

φιλία 8 a 22, 30 a 30 (both of Emped.).

φιλοσοφία: (of Plato) ἐν τοῖς περὶ φιλοσοφίας λεγόμενοις 4 b 19.

φιλῶσοφος, ὁ πρῶτος 3 b 16.

φλέβιον 22 a 3.

φοβεῖσθαι 3 a 20, 24, 8 b 2, 8, 32 b 31.

φοβερός 3 a 23, 21 a 15, 27 b 22, 32 b 31.

φόβος 3 a 17, b 18.

φορὰ: κίνησις τις 6 a 13, b 1, 31, 10 b 23, 19 b 13; τὰς τοῦ οὐρανοῦ φορὰς 7 a 2, τρεῖς 34 a 15; κατὰ φορὰν 8 b 10.

φορτικώτερος 5 b 2.

φράγμα 21 b 29.

φρονεῖν 17 b 8 (bis): joined with γινώσκων 29 a 11, with νοεῖν 17 b 11, 27 a 19; οὐ ταῦτὸν τὸ αἰσθάνεσθαι καὶ τὸ φρονεῖν 27 b 7—οὐ ἀρχαῖοι τὸ φρονεῖν καὶ τὸ αἰσθάνεσθαι

ταῦτὸν εἶναι φασιν 27 a 21, αἰσθάνεσθαι τε καὶ φρονεῖν τῷ ὁμοίῳ τὸ δμοιον 27 a 28, (Emped.) φρονεῖν ἀλλοῖα 27 a 24.  
 φρόνησις: τὸ ὁρθῶς νοεῖν φρόνησις καὶ ἐπιστήμη καὶ δόξα ἀληθῆς 27 b 10; ὑπόδλην τις 27 b 25; ὁ κατὰ φρόνησιν λεγόμενος νοῦς 4 b 5.  
 φρονιμώτατος 21 a 22.  
 φρυκτὸς 31 b 5.  
 φυγή 31 a 12.  
 φύεσθαι: τὰ φύόμενα πάντα δοκεῖ ζῆν 13 a 25, μετέχει τοῦ θρεπτικοῦ μορίου 13 a 33, b 8, 34 a 26.  
 φύλλον 12 b 2.  
 φυσικός: ὁ φυσικός 3 a 28, b 7, 11; distinguished from ὁ διαλεκτικός 3 a 29: ὕλη τῶν ζώων 3 b 17, σῶμα 12 a 12, 13, 15, 20, 28, b 5, 12, 16, 15 b 18; φυσικώτατον ἔργον 15 a 26—φυσικῶς 15 b 27.  
 φυσιολογεῖν 6 b 26.  
 φυσιολόγος 26 a 20.  
 φύσις: joined with οὐσία 2 a 7, so 18 b 2, 5 a 15, 11 b 24, 29 a 21, ἡ τοῦ αἵματος φύσις 5 b 7, τοῦ πυρὸς 16 a 9, ἡ αὐτὴ φύσις ὅτε μὲν σκοτῶς ὅτε δὲ φῶς 18 b 31 (cf. 18 b 8); μεταβολὴ εἰς τὰς ἔξεις καὶ τὴν φύσιν 17 b 16, κινήτικόν τὴν φύσιν 5 a 4—ἡ ὅλη φύσις 4 a 5; πρὸς τὴν φύσιν 2 a 6, ἐν ἀπόσει τῇ φύσει ἐστὶ τι τὸ μὲν ὕλη ἐκαστῷ γένει, ἕτερον δὲ τὸ αἷτιον καὶ ποιητικόν 30 a 10 sq.; ἡ φύσις ἐνεκά του ποιεῖ 15 b 17, καταχρῆται ἐπὶ δύο ἔργα 20 b 17, μήτε ποιεῖ μάτην μὴτὲν μήτε ἀπολείπει τι τῶν ἀναγκαίων 32 b 21, 34 a 31; φύσεως ἔργον 34 b 1: τὰ φύσει 34 a 32, τὰ φύσει συνιστάμενα 16 a 16; φύσει 6 a 15, 21, 34 a 14, opposed to βίη 6 a 22, 23, 24, 25; κατὰ φύσιν 3 b 25, 10 b 15, 15 b 2, 18, 16 a 1, 22 a 33; παρὰ φύσιν 7 b 2.  
 φυτὸν: ἡ ἐν τοῖς φυτοῖς ἀρχὴ ψυχῇ τις 11 b 28; φαίνεται τὰ φυτὰ ζῆν 10 b 23 (cf. 13 a 25 sq.); ὑπάρχει τοῖς φυτοῖς τὸ θρεπτικὸν μόνον 14 a 33, 15 a 2 sq. (cf. 13 a 33, 11 b 28—30, 32 a 29); οὐ μετέχουσι φορὰς οὐδ' αἰσθήσεως 10 b 23, οὐκ ἀναπνεύουσιν 10 b 30, διὰ τί οὐκ αἰσθάνεται 24 a 33, οὐδεμίαν ἔχει αἰσθησιν ὅτι γῆς ἐστὶν 35 a 25, διαρροῦμενα 17 g 9, 11 b 19, 13 b 16; ὄργανα τὰ τῶν φυτῶν μέρη 12 b 1, αἱ βίαι τῷ στόματι ἀνάλογον 12 b 3, ὡς ἡ κεφαλὴ τῶν ζώων 16 a 4—13 b 19, 14 b 33, 15 a 29 (βίς), b 20, 32 a 29, b 18—the view of Emped.) 15 b 29, (of others) 16 a 12.  
 φωνεῖν: εὐλόγως ἀν φωνοῖται ταῦτα μόνα ὅσα δέχεται τὸν ἀέρα 20 b 16, ἀναπνεύοντα μὴδ' ἐκπνεύοντα 21 a 2; οἱ λεγόμενοι φωνεῖν (ιχθύες) 20 b 12; τῶν ἀψύχων οὐθέν φωνεῖ, ἀλλὰ καθ' ὁμοιότητα λέγεται φωνεῖν 20 b 6, 7.  
 φωνή: ψόφος τίς ἐστὶν ἐμφύχου 20 b 5, ζῶου 20 b 13, οὐ πᾶς ζῶου ψόφος φωνὴ 20 b 29, ἀλλὰ δεῖ ἐμφύχον εἶναι τὸ τύπτον καὶ μετὰ φαντασίας τινὸς 20 b 31, σημαντικός τις ψόφος 20 b 33, πολλὰ τῶν ζώων οὐκ ἔχουσιν 20 b 10: ἔχει ἀπότασιν καὶ μέλος καὶ διάλεκτον 20 b 9; ἡ φύσις καταχρῆται

τῷ πνεύματι πρὸς τὴν φωνήν 20 b 22; ἐν φωνῇ διαφοράι 22 b 29—31; ἡ φωνὴ καὶ ἡ ἀκοὴ ἔστιν ὡς ἐν ἐστὶ 26 a 27.  
 φῶς (see 11., c. 7): ἐστὶν ἡ τοῦ διαφανοῦς ἐνέργεια 18 b 9, ἐντελέχεια 19 a 11, οἶον χρώμα τοῦ διαφανοῦς 18 b 11 sq., οὐ πῶρ οὐδ' ὅλως σῶμα οὐδ' ἀπορροή σώματος 18 b 14, ἀλλὰ πυρὸς ἡ τοιοῦτον τινὸς παρουσία ἐν τῷ διαφανεῖ 18 b 16 (cf. 18 b 20, 31); ἐναντίον τῷ σκότει 18 b 18; αἰεὶ ἀνακλᾶται 19 b 29, οὐχ οὕτως ὥστε σκιὰν ποιεῖν 19 b 31 sq.; ποιεῖ ἐνέργειαν χρώματα 30 a 16 sq.; ἔξις 30 a 15 (cf. 18 b 19)—ἀνευ φωτός 19 a 9, 20 a 28, 29 a 4, ἐν φωτὶ 18 b 3, 19 a 1, 2, 8, 22, 23, περὶ φωτός 18 b 3, ἐπὶ τοῦ φωτός 19 b 29—19 b 30, 33, 24 b 10, 25 b 22—(Emped.) φερομένου τοῦ φωτός 18 b 22.

χαίρειν 8 b 2, 6.  
 χαλεπὸς 402 b 10, 6 b 23, 8 a 5, 11 b 18, 13 b 15, χαλεπώτερον 2 a 17, ἐστὶ τῶν χαλεπωτάτων 2 a 11.  
 χαλκὸς 19 b 7, 15, 16, 32, 24 a 21.  
 χαλκοὺς: σφαῖρα 3 a 13, σημείον 24 a 21.  
 χαρὰ 3 a 18.  
 χάριν: ἕτερον χάριν 7 a 24.  
 χεῖρ 16 b 26: ἡ χεῖρ ὄργανόν ἐστιν ὀργάνων 32 a 1.  
 χεῖρων 21 a 10.  
 χθών (Emped.) 10 a 4.  
 χθάνος (Emped.) 10 a 4.  
 χολή 25 b 1, 3.  
 χορδὴ 24 a 32.  
 χρῆσθαι 4 a 30, 5 a 14, 7 b 26, 15 a 26, 18 a 2, 27 a 12, 13.  
 χροά 24 b 34, 25 a 1.  
 χρόνος: joined with μήκος as συνεχές τι 30 b 20; ὁμοίως διαιρετὸς καὶ ἀδιαιρετος τῷ μήκει 30 b 9 (cf. 30 b 12, 18); χρόνου αἰσθησιν 33 b 7, ἐν ἀδιαιρέτῳ χρόνῳ 26 b 31, 30 b 8, 15, ἐν ὀλίγῳ ἐπὶ πολλῷ, ἐν πολλῷ ἐπ' ὀλίγον 20 a 31 (cf. 20 b 3), ἐν ᾧ χρόνῳ 30 b 17; χρόνῳ προτέρα 30 a 21 (βίς), 31 a 2, 3—11 b 22, 27 b 2, 30 b 1, 13.  
 χρυσὸς 24 a 20, 21.  
 χρυσοὺς: σημείον 24 a 20.  
 χρώμα (see 11., c. 7): ὁρᾶται χρώμα ἡ τὸ ἔχον 25 b 18, ὅψις χρώματος 18 a 13, ὁρατὸν ἐστὶ 18 a 27, 22 a 16; τὸ ἐπὶ τοῦ καθ' αὐτὸ ὁρατοῦ 18 a 29; τὸ ἐκαστον ἐν φωτὶ ὁρᾶται 18 b 3 (cf. 19 a 8, 22, 20 a 28, οἰκείον χρώμα 19 a 2, 6); ἀλλότριον χρώμα 18 b 6; κινήτικόν τοῦ κατ' ἐνέργειαν διαφανοῦς 18 a 31 (cf. 19 a 13, τὸ χρώματι εἶναι 19 a 10); οὐχ ὁρᾶται τῷ μελύνεσθαι, οὐδὲ τὰς ἀπορροίας 22 a 14; οὐ τρέφει 34 b 20 (cf. 14 b 10); δυνάμει, ἐνέργειαν χρώματα 30 a 16, 17; χρώματος δεκτικὸν τὸ ἄχρον 18 b 26; ἡ τοῦ χρώματος ἐνέργεια ἀνώνυμος 26 a 14; οἶον χρώμα 18 b 11; διαφοράι χρωμάτων 21 a 15, περὶ χρώμα 22 b 32, εἰδῆ ἐπὶ τῶν χρωμάτων 22 b 11—18 a 15, 19 a 12, 19, 21 a 9, 13, 23 a 9, 24 a 22, b 4, 25 b 9, 14, 19, 26 b 2, 22 b 2, 35 a 7, b 8.

χωματίζεσθαι 25 b 22.

χωρῶνυσθαι: κεχωρῶσμένον 18 a 16.

χυμός (see II., c. 10): γεύσις χυμοῦ 18 a 13, τὸ γευστὸν ὁ χυμός 22 a 17 (contrast 22 a 10), ἐν τῇ τῶν ἀπτῶν 14 b 11, τοῦ ὕγρου 22 a 6, οὖον ἡδυσμα 14 b 13; χυμοῦ αἰσθησιμὸν 22 a 17; τὰ εἶδη τῶν χυμῶν ἀνάλογον ἔχει τοῖς τῶν δόσμεθ 21 a 18 (cf. 21 a 28 sq.), τίνα ἐστὶν 22 b 10 sqq., ὁ μὲν γλυκὺς ὁ δὲ πικρὸς 21 a 26, διαφοραὶ χυμῶν 22 b 14; ἡ τοῦ χυμοῦ ἐνέργεια ἀνώνυμος 26 a 15; τὰ ἀπτά καὶ οἱ χυμοὶ ποιοῦσι τὰ σώματα 24 b 12; ἡ ἅμα συμβαίνει ἀπτικὸν εἶναι, ταύτῃ φθείρει 35 b 12.

χυτὸς 6 b 19.

χώρα στυγμῆς 9 a 23.

χωρίζειν 32 a 27, 33 b 2: χωρίζεσθαι 3 a 11, 9 a 29, 11 b 29, 13 a 31, b 5, 26, 15 a 2: φαίνεται χωρίζόμενα 13 b 17, χωρισθεὶς 30 a 22, χωρισθείσης 12 b 13, χωρισθὲν 3 a 14: ταῦτα κεχωρισμένα συντίθεται 30 a 30—κεχωρισμένους used as an adjective ἐν κεχωρισμένῳ χρόνῳ 26 b 24, κεχωρισμένα μόρια 32 b 2, οὐθὲν ἐστὶ κεχωρισμένον 32 a 4, κεχωρισμένον ὄντα 31 b 18, ἡ κεχωρισμένα 3 b 15, so 26 b 17, 23, 27 a 3, 13, 14, 31 b 16 (bis); τὰ κεχωρισμένα 26 b 23, 31 b 18—κεχωρισμένους 31 b 14.

χωρὶς ἐκάτερον νοῶν 30 b 11.

χωριστὸς 3 a 12, b 10 (bis), 11 b 26, 13 a 4, b 28, 29 b 5, 16, 21, 30 a 17, b 18; ἐνεργεία ἐστὶ καὶ χωριστὸν 30 b 26; λόγῳ μόνον ἢ καὶ τότῳ 13 b 14, μὴ κατὰ μέγεθος ἀλλὰ κατὰ λόγον 29 a 11, ἡ μεγέθει ἢ λόγῳ 32 a 20.

ψαθυρὸς 19 b 35.

ψάμμος 19 b 24.

ψευδεσθαι 27 b 21, 28 a 4, b 21, 22.

ψευδής 28 a 12, 15, 18, 19, b 2, 8 (bis), 17, 29, 30 b 27—ψευδῶς 27 b 13.

ψευδὸς 5 b 32, 28 b 19, 30 a 27 (bis), b 2, 4, 31 b 11, 32 a 12.

ψοφεῖν 19 b 22, 20 b 12, 30; πᾶν ψοφεῖ τύπτοντός τινος καὶ τὴ καὶ ἐν τινι 20 b 14 (cf. 19 b 13); πότερον ψοφεῖ τὸ τυπτόμενον ἢ τὸ τυπτόν; ἡ καὶ ἄμφω 20 a 20; δύναται ψοφῆσαι 19 b 8, τὸ δυνάμενον ψοφεῖν 25 b 30; τὸ ἔχον ψόφον οὐκ αὖ ψοφεῖ 25 b 29 (cf. 25 b 29 sq.); τὸ ψοφοῦν 18 b 16, 19 a 29, b 12; αἱ διαφοραὶ τῶν ψοφούντων 20 a 26.

ψόφησις: ὁ κατ' ἐνέργειαν ψόφος 26 a 1, ἡ τοῦ ψοφητικοῦ ἐνέργεια 26 a 7 (cf. 26 a 12).

ψοφητικός: τὸ κινήτικόν ἐνὸς ἀέρος συνεχεῖα μέχρις ἀκοῆς 20 a 3; τοῦ ψοφητικοῦ ἐνέργεια 26 a 6; δι' ἐτέρων αἰσθανόμεθα 23 b 5, τῷ τὸ μεταξὺ ποιεῖν τὴ ἡμᾶς 23 b 13.

ψόφος (see II., c. 8): διττὸς 19 b 5, 26 a 8, ὁ μὲν ἐνεργεία τις, ὁ δὲ δυνάμει 19 b 5, 9, ὁ κατ' ἐνέργειαν 19 b 9, 20 a 27 (cf. 26 a 18); ὁ κατ' ἐνέργειαν ψόφος καὶ ἡ ἀκοή ἡ κατ' ἐνέργειαν ἡ αὐτὴ καὶ μὴ 25 b 27 sqq. (cf. 25 b 31), ἀνάγκη ἐν τῇ κατὰ δύναμιν εἶναι 26 a 3: ἀκοή ψόφου 18 a 13, ψόφου

τε καὶ σιγῆς 22 a 23, τὸ ὑποκείμενον ἀκοῇ ψόφος 22 b 33; ψόφου δεκτικὸν τὸ ἄψοφον 18 b 27; τὸ μεταξὺ ψόφου ἀπὸ 19 a 32, ὑπὸ ψόφου τὸ μεταξὺ κινεῖται, ὑπὸ δὲ τούτου τὸ αἰσθητήριον 19 a 27, οὐ ψόφου κύριος ὁ ἀπὸ οὐδὲ τὸ ὕδωρ 19 b 19; ἡ ἀέρος κίνησις ψόφος, ὅταν κωλυθῇ θρύπτεσθαι 20 a 9 (cf. 20 a 21, b 11); ἀδύνατον ἐνὸς ὄντος γενέσθαι ψόφον 19 b 11, πληγὴ ἐστὶν ἡ ποιοῦσα 19 b 10 sq., οὐ τῶν τυχόντων πληγὴ 19 b 14 sqq., ταῖς υπερβολαῖς οὐ διαφθείρει τὸ ζῶον, ἀλλὰ μόνον τὸ αἰσθητήριον 35 b 9, 10; οὐ τρέφει 34 b 19 (cf. 14 b 10), οὐδὲν ποιεῖ τὰ σώματα 24 b 10; οὐκ ἄνευ ψόφου τὸ δεῦ καὶ τὸ βαρὺ 20 a 28; distinguished from φωνῇ 20 b 29 (cf. 20 b 5, 13, 32)—18 a 15, 19 a 25, b 4, 6, 28, 20 a 17, 21 a 9, 22 a 24, 25, 23 a 8, 24 a 23, b 15, 34, 25 b 29, 26 a 7, 29 b 1, 2.

ψυκτὸς 26 b 6.

ψύχεσθαι 24 a 34.

ψυχή: φυσικοῦ τὸ θεωρησάι περὶ ψυχῆς 3 a 28 (cf. 2 a 4—6); πάθος τῆς ψυχῆς ἴδια 2 a 9, κοινὰ τοῦ ἔχοντος 3 a 4 (cf. 2 a 9 sq.), ἀχώριστα τῆς φυσικῆς ὕλης τῶν ζῴων 3 b 17; τί ἐστὶ, τίς κοινότητος λόγος 12 a 5 (cf. 12 b 4, 15 a 23—25), ἐντελέχεια ἡ πρώτη σώματος φυσικοῦ ὀργανικοῦ 12 b 5 (cf. 12 a 27, 19—21, 14 a 27), οὐσία ἡ κατὰ τὸν λόγον 12 b 10, τὸ τί ἦν εἶναι τῷ τοιοῦτὶ σώματι 12 b 11 (cf. 14 a 18), τοῦτο ᾧ ζῶμεν καὶ αἰσθανόμεθα καὶ διανοούμεθα πρῶτως 14 a 12, λόγος τις καὶ εἶδος, ἀλλ' οὐχ ὕλη καὶ τὸ ὑποκείμενον 14 a 13 sq., σῶμα οὐκ ἐστὶ, σώματος δὲ τί 14 a 20; ἐν σώματι ὑπάρχει καὶ ἐν σώματι τοιοῦτον 14 a 21 sqq. (cf. 7 b 15 sqq.), τῆς ἐν τοῦτοις τοῖς μορίοις ψυχῆς 20 b 28, τὸν αὐτὸν τρόπον εἰς ἂν εἴη λόγος ψυχῆς τε καὶ σχήματος 14 b 20 (cf. 2 b 5 sqq.), δεῖ ἐφαρμόσει μὲν πᾶσι, ἴδιος δ' οὐδενὸς ἐστὶ 14 b 23, τοῦ ζῶντος σώματος αἰτία καὶ ἀρχὴ 15 b 8, κατὰ τοὺς διακριμένους τρόπους τρεῖς 15 b 9—28; τὸ σῶμα συνέχει 16 a 8, 11 b 8 (cf. 11 a 30—b 30, 10 b 10—13); τὰ φυσικὰ σώματα τῆς ψυχῆς ὄργανα 15 b 18 (cf. 7 b 26, 11 b 14—17, δεῖ λαβεῖν τὸ ἐπὶ μέρους ἐφ' ὅλου τοῦ ζῶντος σώματος κτλ. 12 b 22—25); οὐ κινεῖται 6 a 2 sqq., 8 a 33 sq., b 15, 30 sq., 11 a 25 sq., κατὰ συμβεβηκὸς κινεῖσθαι ἐστὶν, οἷον κινεῖσθαι ἐν ᾧ ἐστὶ 8 a 30—33; οὐκ ἐστὶν ἐν τότῳ 6 a 14—29: ἡ δὴ ψυχὴ distinguished from τὰ μόρια, μέρη, δυνάμεις 2 b 2, 11 a 30, b 2—27, 13 b 12, 14 a 31, 32 a 19 sq., but contrast 32 a 2—b 7 (see s.v. μόριον); ἐνίοις τῶν ζῴων ἄπανθ' ὑπάρχει, τισὶ δὲ τινα, ἐτέροις δὲ ἐν μόνον 13 b 32, 14 a 32 sqq., b 15—19, 29 sqq., 15 a 1—3, 6—8; οἷς ὑπάρχει λογισμὸς τῶν φθαρτῶν, τοῖσι καὶ τὰ λοιπὰ πάντα, οἷς δ' ἐκείνων ἕκαστον, οὐ πᾶσι λογισμὸς 15 a 8, 23 sq., b 21—23 (cf. 13 a 31, 11 b 29); αὖ ἐν τῷ ἐφεξῆς ὑπάρχει δυνάμει τὸ πρότερον 14 b 29; ἡ πρώτη ψυχὴ γεννητικὴ οἷον αὐτὸ 16 b 25 (cf. 5 b 4 sq.), ἡ θρεπτικὴ ψυχὴ πρώτη καὶ

κοινοτάτη 15 a 24, ἥς ἔργα γεννηῖσθαι καὶ τροφήν χρῆσθαι 15 a 25, 16 b 17—20; τὰ μόρια τῆς ψυχῆς οὐκ ἔστι χωριστὰ ἀλλήλων 13 b 14 sqq., 11 b 26, τῷ λόγῳ ὅτι ἕτερα φανερόν 13 b 29, 32 b 1, 3 sq., τὸ εἶναι ἄλλο 31 a 14; ἡ ψυχὴ τὰ ὄντα πῶς ἔστι 31 b 21, οὐκ αὐτὰ ἀλλὰ τὰ εἶδη 31 b 28, 32 a 2, τόπος εἰδῶν 29 a 27, 17 b 23—earlier views: δύο διαφοραῖς ὁρίζονται μάλιστα τὴν ψυχὴν, κινήσει τε τῇ κατὰ τόπον καὶ τῇ νοεῖν καὶ τῇ κρίνειν καὶ αἰσθάνεσθαι 27 a 17, 3 b 25—27, 32 a 15—17, ὁρίζονται πάντες τρισὶν ὡς εἰπεῖν, κινήσει, αἰσθήσει, τῷ ἀσωμάτῳ 5 b 11 (cf. 9 b 19—24), τὸ κινεῖν 3 b 29, τῶν κινουμένων τι 3 b 30 sq., (Democr., Leucip.) πῦρ τι καὶ θερμὸν 4 a 1, 5 a 5—13 (cf. 6 b 15—24, 9 b 8), (Anaxag.) τὴν κινουσαν 4 a 25, b 2—5, (certain Pythagoreans) τὰ ἐν τῷ ἀέρι ἔσσματα 4 a 18, τὰ ταῦτα κινεῖν 4 a 19, (Thales) κινήτικόν τι 5 a 19, (Alcmaeon) αἰεὶ κινουμένην 5 a 29 sqq.—ἡ στοιχεῖον ἢ ἐκ τῶν στοιχείων 5 b 13, (Emped.) ἐκ τῶν στοιχείων πάντων, εἶναι δὲ καὶ ἕκαστον ψυχὴν τούτων 4 b 11 sqq., 9 b 23 sqq., 10 a 28, (Diogenes) ἀέρα 5 a 21 sqq., (Heraclitus) ἀναθυμίασις 5 a 26 sqq., (Hippoc.) ὕδωρ 5 b 2, (Critias and others) αἶμα 5 b 4, 6 sq., (Philolaus) ἀρμονίαν τινὰ 7 b 30 sqq., ἐν τῷ ὄλῳ μεμείχθαι 11 a 7 sqq., (the Orphic doctrine) 10 b 28 sqq.—(Plato) τὸ κινεῖν ἑαυτὸ ἢ δυνάμενον κινεῖν 6 a 1, b 26 sqq., ἐκ τῶν στοιχείων 4 b 17—27, (Xenocrates) ἀριθμὸν κινουμένον ἑαυτὸν 4 b 29 sq., 8 b 32 sqq., 9 b 11 sq.—etymology: διὰ τὴν κατάψυξιν καλεῖσθαι ψυχὴν 5 b 29.  
 ψυχικὸν μόριον 24 a 33.  
 ψυχρὸς contrasted with θερμὸς 5 b 25, 28, 14 b 8, 13, 22 b 26, 23 b 28, 24 a 3, 10, 29 a 25, b 15, 35 a 23, b 14.

ὦδε 31 a 21.

ὦδὲ 26 b 31.

ὠθεῖν 6 b 6, 34 b 31 (*his*), 32 (*his*), 33 (*his*), τὸ ἀμβλὺν ὁλον ὠθεῖ 20 b 2.

ὦσις: ὥσει καὶ ἔλξει 33 b 25, ὥσις καὶ πληγὴ 35 b 10.

ὥς: with accusative absolute 7 a 1, 11 b 26, 15 b 20: with genitive absolute 8 b 15, 11 b 27, 13 b 18, 16 a 32, 17 a 14, 18 b 21, 21 a 12, 24 a 4, 26 b 3, 33 a 4—ὥς εἰπεῖν 5 b 11, 8 a 1, ὥς ἀπλῶς εἰπεῖν 18 b 5, ὥς ἐν κεφαλῇ εἰπεῖν 33 b 21.

ὠσαύτως 25 b 22, 27 b 23, 31 a 18.

ὥσπερ: introducing an elliptical clause (cf. καθάπερ) 2 a 15, b 18, 3 a 22, b 19, 4 a 27, 6 a 18, 8 b 22, 9 a 14, 12 b 7, 13 a 9, 17 b 9, 18, 19 b 27, 31, 20 a 14, 16, 21 a 32, b 11, 27, 22 a 27, 28, b 7, 10, 33, 23 a 31, b 10, 15, 24 a 7, 14, 31, b 16, 27 b 19, 29 a 17, 26, b 29, 30 a 1, 3, b 21, 26, 31 a 28, 33 b 26, 34 a 13; ὥσπερ ἂν εἰ 9 b 27, 19 b 24, 23 a 7, 27 b 23, 35 a 9—as it were (like *ὁλον*) 7 b 29, 12 a 4, 13 a 16, 21 b 29, 27 a 19, 30 a 28, 31 b 7, 32 a 9, 34 b 18, 35 a 21—more irregular, apodosis to be supplied 14 a 22, 27 a 10, 31 a 17 (cf. οὕτως ἔχει ὥσπερ)—with accusative absolute (like *ὥς*) 7 b 21—in apparently redundant clause *εἴκειν ὥς ὁ ἀήρ, οὕτως ἔχειν ὥσπερ ἐκείνων ἕκαστον* 23 b 19 (cf. 31 b 12 sqq.).

ὥστε: after οὕτως with finite verb 24 b 31, with infinitive 13 b 14, 19 b 32, so without οὕτως 12 b 26, 20 a 25, 29 a 21, 34 a 15, b 31—introducing an inference or the conclusion of a discussion 2 b 26, 21 b 19, 23 a 15, b 26, 25 a 11, 33 a 17, 34 b 21 and often: so in apodosis after *εἰ* 14 a 13, after *εἰ* 32 b 25: without verb expressed 31 a 27, 35 b 16 (cf. 6 b 2).



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